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SOVIET UNION ECONOMIC AFFAIRS

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OZHERELYEV ON PRODUCTION RELATIONS, MANAGEMENT

PM131100 Moscow PRAVDA in Russian 10 Jul 87 Second Edition pp 2-3

[Article by Doctor of Economic Sciences O. Ozherelyev under new rubric "The CPSU Central committee June Plenum: Unity of Theory and Practice": "Production Relations and Economic Management"]

[Text] The CPSU Central Committee June (1987) Plenum made a major contribution to the ideological and theoretical platform, created since April 1985, of the acceleration of the country's socioeconomic development and the attainment of a fundamentally new condition of society on this basis. In essence the party has made a fundamental breakthrough on the theoretical front and carried out a renewal of ideas on the economic forms of socialism. It is a question of the content of such fundamental concepts as socialist ownership, democratic centralism and self-management in the economy, distribution according to labor and socialist equality and justice, the commodity-money relationship and how it is combined with the systematic approach, full economic accountability [khozraschet], credit, and financial relations. The plenum documents and the measures they provide for combine tremendous experience of socialist building and strict analysis of the totality of the facts of public life with the creative development of Marxism-Leninism, and make it possible to resolve the problems which arise.

"The main question in the theory and practice of socialism," it was noted in M.S. Gorbachev's report, "is how, on a socialist basis, to create more powerful incentives to economic, scientific, technical, and social progress than under capitalism and how most effectively to combine planned leadership with the interests of the individual and the collective." A clear answer was given to this question. Having concluded that the strongest interest, the most powerful motive force for acceleration is the interest of the working people as masters of production, the party thereby found the key to activating the human factor. Namely: To create a system of relations which ensures that the working person is in the position of a true master, both in his job, in the collective, and in society as a whole. It is through the real improvement of production relations that society masters the mechanism of management of the creative activeness of working people--both the individual person and the collective.

Until recently production relations were not infrequently considered not only independently of production forces, but also in isolation from the existing

economic mechanism and the entire management system. This approach is damaging in that production relations were regarded as something abstract, elusive, and not subject to conscious transformation by society. All this gave rise to a situation where the political economy of socialism basically substituted scholastic disputes about concepts and definitions for the analysis of the living dialectic of production forces and production relations. At the same time the problems of improving management and the economic mechanism were in effect regarded as being beyond the bounds of production relations, and therefore also beyond the bounds of the subject matter of political economy. This approach was not the least important factor in the fact that our economic mechanism often developed by the trial and error method and, even worse, through theoretical constructs divorced from the realities of economic life. The situation was exacerbated by the fact that whereas the dependence of the economic mechanism on production relations was at least proclaimed, the very possibility of a profound transformation of production relations through radical restructuring of economic management was utterly denied. Thus, the essence was divorced from the phenomenon, and economic management was not regarded as a real phenomenon of production relations.

Radical reform of economic management is a concrete form of taking into account and realizing in practice the interdependence of the development of production forces and production relations, the base and the superstructure, and of resolving the contradictions which have accumulated here.

The comprehensive restructuring of economic management rests on the party's fundamental ideas on mature socialist production relations and their advantages. Here we see revealed not only the profound, internal, common communist essence of socialist production relations, but also their common quality, which, in fact, is the sole cause of their organic integrity. This concept attaches key significance to Marx' conclusion that socialism is based "on the foundations of collectivism, on common ownership of the means of production" (K. Marx, F. Engels, Works, Vol 19, p 18).

The abstract, theoretical approach toward ownership by the whole people, without taking into account all its living tissues, failed to orient the quest toward the creation of conditions under which the working person would really be fully the master--zealous and with an interest. A situation arose in which selfish and narrow group interests were not infrequently passed off as the interests of the whole people, and were even registered in the form of statewide interests.

There was a divergence between the stated content of social ownership and actual relations. The present transformations, however, create a system of relations whereby self-management relations should permeate all levels not only of the political system and social sphere, but also of the management of social reproduction: from the basic component to the national economic level. This means not only an improvement in the electoral system and the appointment of leaders by election, but also a radical change in the system of making decisions and monitoring their fulfillment and the consideration of public

opinion as an essential component of society's life. Democratism, extending to self-management by the people, is an essential aspect of ownership by the whole people and of the system of socialist production relations as a whole. It must not only be greatly strengthened, it must also be endowed with fundamentally new content.

The transformation of the working person into the real and active owner of the whole people's property is indissolubly linked with the deepening of another aspect of economic relations, namely equality. From this standpoint, increasing the maturity of production relations is seen first and foremost as a process of deepening socioeconomic equality, which V.I. Lenin called the highest goal of mankind.

However, it is necessary to be clearly aware that it is a question of deepening specifically the socialist content of equality, socialist justice, factors which today activate to the greatest possible degree all the motive forces inherent in the human factor. This equality lies, first, in the right of all citizens to labor and to access to all the means of production, and, second, in ensuring that labor, and only labor, is the one (and only) measure of participation in the consumption of the overall results of production. Until such time as labor itself becomes the first necessity of life, for as long as it remains the means to live, it will be the decisive criterion in the acquisition of the results of socialist production. Under socialism, social justice can be ensured by only one means--that of creating an organic link between the measure of labor and the measure of consumption.

Third, equality, which arises from ownership by the whole people, presupposes genuinely equal participation by all working people and labor collectives in management, or more accurately self-management. To this end we need broad economic democratization to create conditions that will enable everyone to be master of his enterprise and of the country.

Until recently most of these functions were in the hands of ministries and departments. That is why departmental interests often dominated economic decisions. This was the root of the bureaucracy which literally eroded the dynamism of our society's socioeconomic development.

Socialist justice as unity between the measure of labor and the measure of consumption requires that apportionment take place on the basis of an integrated approach to the evaluation of labor and results. Today this can be ensured by means of a broader and more consistent utilization of the commodity-money relationship.

Historically, it has become established that the potential of the commodity-money relationship for objectively evaluating labor expenditure and results has been underestimated in socialist political economy and in practice. Instead of a dialectical interaction between directly social forms and the commodity-money relationship, the latter has tended to be discarded entirely. A formal interpretation of commodity-money forms and levers has in practice acted as a kind of theoretical justification for their transformation into

the forms and levers of bureaucratic and sometimes voluntarist management methods.

The concept of socialism developed at the plenum incorporates not simply a recognition of the objective necessity of the commodity-money relationship, but also its active utilization in the system of planned management. The party proceeds on this basis in determining the paths of the restructuring of planning, pricing, and the finance and credit system and the transition to full economic accountability.

A prerequisite for this must be to strengthen the money turnover and increase the role and prestige of the Soviet ruble. The measures adopted will make it possible to put an end to the situation where money was the only commodity not in short supply, and to restore its function and role as a universal equivalent. In short, the movement of money must genuinely be regulated by objective economic laws, and not purely arbitrary decisions.

In defining the main path of the improvement of production relation, the CPSU, on the basis of Leninist fundamental theoretical views, has drawn the conclusion that we should seek the answers to life's questions not outside socialism, but within the framework of our system and through covering the potential of the planned economy and socialist democracy. This means that the improvement of production relations must strengthen their general communist principles, with which socialism's advantages are directly linked. Here it is important in no way to identify them with "bureaucratic centralism," since the appropriate general communist principle is, first and foremost, self-management by the people. The development of true self-management principles in the labor collectives' life will act as the catalyst for the development of the economy and a concrete form of implementation of ownership by the whole people of the means of production.

The people's living creativity--the key force for acceleration--cannot be replaced by even the best directives. The transition to economic methods of management is a natural development. Nonetheless the coordination of all components of the national economy and the creation of the necessary socioeconomic conditions for activating the motive forces of socialist society cannot but depend to an enormous extent on central management organs. The further improvement of their work means the all-around development and improvement of the practical application of the principles of democratic centralism and its ever greater enrichment with self-management principles. This must be noted particularly, since it was in the practical application of democratic centralism in economic management that distortions took place in its scientific foundations, the economic life of labor collectives became identified with bureaucratic regulations, and the leaders of production components were fettered with petty tutelage.

The substitution of economic methods in the management of the national economy for administrative--in the worst sense of the word--methods and the overcoming of the undervaluing of the commodity-money relationship, in conjunction with the consistent implementation of the economic law of distribution according to

labor, will find concentrated expression in the switching of enterprises to genuine economic accountability.

However, the question arises: Does not this switch undermine the foundations and advantages of centralized planning, which makes it possible rapidly to concentrate resources on the key directions and tasks of the country's economic development? After all, when enterprises switch over to self-financing, the former range of forms and levers for concentrating resources in this way is severely restricted. In these conditions, it is possible to strengthen the center's role in the implementation of the main aims of the party's economic strategy and in determining the rate and proportions of the national economy and its balance, the need for which was indicated by the 27th CPSU Congress? The solution, I believe, is to utilize two main levers in conjunction with each other: the system of economic norms and state orders.

The demands of central organs as society's representatives will be expressed through the state order and economic norms, which, by ensuring the priority of the interests of the whole people, create the economic conditions for broad autonomy, initiative, and enterprise. Thus not only are planning principles retained, but their effectiveness is greatly increased.

In this context the potential for concentrating resources on the key directions of scientific and technical progress, far from being weakened, are strengthened, by means of overcoming departmental and local self-interest. This will make it possible significantly to improve the situation. It will also increase the economic justification for the choice of the avenues for investing state resources and the economic responsibility for that choice on the part of the labor collectives directly utilizing these resources.

This approach makes it possible to overcome the principle of the "common cooking pot," whereby the Gosplan, Gossnab, and other economic departments place the orders, while the actual consumers are the specific enterprise and the individual purchaser. The contractual order type of economic ties must become an essential component of the entire management mechanism.

V.I. Lenin described distribution relations as an instrument, a means of accelerating production. The fact that distribution according to labor is the basic principle of socialism has been constantly stated and emphasized. But in practice its implementation has been poor. and it is not only, or chiefly, a question of illegal unearned income. Here, so to speak, everything is plain to see. What is more complex is the matter of wages and bonuses, which very often were not linked to the contribution to the fund from which they are paid. The switching of enterprises onto full economic accountability makes it possible to place every labor collective's income in direct dependence on the efficiency of its work.

Distribution according to labor can and should be the best form of economic coercion (without which socialism cannot get by) toward the rational utilization of all resources, the quest for reserves, and the enhancement of production efficiency and output quality. It must be said that under

socialism the commodity-money relationship has significance above all in so far as it makes it possible more accurately and fully to implement the basic principle of socialism--"from each according to his abilities, to each according to his labor."

Individual labor, whether that of the individual worker or of the collective, cannot act as a measure of consumption other than through comparison with the social norm of expenditure per unit of useful output, that is, through comparison with socially necessary labor expenditure. Here socially necessary time serves as a measure of the producers' individual contribution to the end results of social production, and thus the individually consumed proportion of the total product.

It has been demonstrated in theory and confirmed in practice that that greatest degree of interest of the producers themselves in the attainment of the best end results in the national economy is achieved where their labor remuneration can be directly linked to this. This link makes it possible to establish the fullest possible application of the proportionate method of formation of the labor remuneration fund. The labor collectives, having an interest in increasing the wage fund, have at the same time a direct interest in increasing their contribution to national economic end results.

A significant task of the radical reform of economic management is, by reviewing wholesale prices and introducing payment for resources, various deductions, privileges, rebates, taxes, and other levers, to smooth out the influence of factors which do not depend on the collective's activity. In this way it is possible to achieve an indicator of labor contribution, that is, economically accountable income--net output after deduction of payments into the budget, and also payment on loans, fines, and so forth. Not redistributed, but actually created income should be the source of self-financing.

It is also necessary to change the procedure for payment into funds: to collect this payment not on the basis of the actual length of service of means of labor, but on the basis of the normative length (for means of labor which have served the normative term but continue to function, it is clearly not expedient to deduct payment for the funds, since even without this the enterprise is placed under worse conditions than those who have obtained new machinery). In conditions of a shortage of machine building output, this measure will also promote the more rational distribution of new instruments of labor.

During the allocation of budget means for capital construction where this is necessary, it is not the "clout" of the leader of an economic unit which should be decisive, but the efficiency with which the allocated resources will be used. A more objective assessment of the utilization of budget means will be assisted by a competitive system for their allocation to specific enterprises and organizations.

A planned system of long-term normatives for the formation of the labor remuneration fund on the basis of net output from which various payments to the state budget and other commitments have been deducted will give the production collectives confidence that that part of the net product which directly depends on their contribution to increasing its overall sum will remain at their disposal.

Net output, provided that it is scientifically determined and based on prices that correspond to the socially necessary labor expenditure, brings together all the factors of the growth effect (reduction of material and labor expenditure, improved output quality, introduction of scientific and technical achievements, and so forth). Efforts to achieve the best results as regards this indicator encourage the maximum utilization of all factors and the identification of all reserves for acceleration. This makes it possible to draw the conclusion that net output, provided that the necessary conditions are observed, best reflects the national economic end results of any economically accountable unit, and that orientation toward this indicator makes it possible most effectively to activate all the motive forces of the acceleration of the country's socioeconomic development.

The entire historical experience of the conduct of economic reforms teaches us that the isolated improvement of separate elements of the economic mechanism cannot produce a cardinal improvement.

That means that a radical reform of economic management must be simultaneously a reform of the structure of management as well as planning, incentives, pricing, credits, and rent payments. In other words, just like in any other integral system, all the elements in the system of economic relations are interconnected. It is not possible to change one of them without changing the others. Furthermore, the economic system itself is organically linked not just with the production forces but also with the political system and the superstructure in general. And the key to the solution of many problems in economic development lies in the need for transformations in superstructure relations. This is why the course toward acceleration is not confined to transformations in the economic sphere. It presupposes the improvement of all social relations, the renewal of the forms and methods of the political and ideological institutions, and the deepening of socialist democracy.

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PLANT DIRECTOR DESCRIBES RESTRUCTURING PROBLEMS

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 6, Jun 87 pp 3-6

[Interview with Boris Ivanovich Fomin, hero of socialist labor; general director, LPEO "Elektrosila" im. S. M. Kirov, by A. Simonyan: "The Business of One and All"; date of interview not given]

[Text] Revolutionary reforms in society and the acceleration of socioeconomic development require interpreting the processes in progress and bringing untapped reserves to light. The editors called upon B. I. Fomin, hero of socialist labor; general director, LPEO "Elektrosila" im. S. M. Kirov, to describe the problems that confront the association in connection with its conversion to the new conditions of operation and how the possibilities of resolving them are being used.

[Question] Boris Ivanovich, the restructuring process that has begun in the national economy above all means using production reserves and the subordination of planning, management techniques, the expansion of rights, and the increased autonomy and responsibility of enterprises (associations) to this end. How is it being carried out and what is actually being done in the association in this direction since the adoption of the decisions of the 27th CPSU Congress that articulated the strategy of socioeconomic acceleration?

[Answer] The experience of the "Elektrosila" Association shows that the restructuring is proceeding at a slow pace thus far. I shall attempt to illustrate this on the basis of various aspects of our collective's activity, in particular on the basis of planning, since material-technical supply and the normal rhythm of production depend on the quality of planning of volume, mix and economic indicators.

Without going into existing methods, deadlines, and the procedure for compiling five- and one-year plans, from which our association has been practically removed, I shall attempt to show what the results of our present planning have led to. At the present time, there are seven large generators and dozens of separate rotors and stators in the association's warehouses and shops and on its grounds. I do not think I have to explain the meaning of

above-normal inventories, expended materials, and resources. But what do you say to the workers that have created these machines and assemblies? Why are their products not in demand? Because of planning miscalculations? Obviously, such an explanation cannot satisfy anyone.

The way out of this existing vicious circle evidently lies in the transfer of individual planning functions to enterprises which, after taking state orders into account, will formulate the remainder of their product program on the basis of bilateral contracts with due regard to the needs of socialist society and export needs. It is interesting that the coordination of the postponement of deliveries of the machines and assemblies referred to above is carried out on a bilateral basis that bypasses Gosplan and the ministries. But the question persists: why not take all this into account in the planning stage?

There are also certain difficulties in supply. As is known, metal is industry's bread. "Electrosila" has been on a starvation diet since January 1987 for the sole reason that metal is not allocated to us on the basis of specific norms of an approved product mix, but rather on the basis of millions of rubles' worth of commodity output, which does not correspond to the association's needs. The result was that we suffered a shortfall of 9000 tons of rolled metals. In addition to this, without any special fanfare we were not supplied approximately 100 tons of plastics that are so essential for the production of consumer goods, etc.

[Question] Why is this happening?

[Answer] First, unfortunately, there has been no improvement in the supply of material resources. As already stated, the association's collective is very disturbed over the fact that stocks are not allocated in good time. And after all, there is a solution here: what we need is wholesale trade and bilateral direct ties with suppliers. What could be simpler than having the our own working capital and acquiring the necessary materials? I assure you that we will not take more metal than we need. Why do the planning and supply agencies think that they are better informed on our needs for metal or plastics? I do not know how other departments and regions address these problems, but we have not even taken the first steps in organizing wholesale trade.

As regards responsibility for flaws in the organization of production, no one but the association itself is to blame.

[Question] The restructuring process is in large measure determined in the lower links--in production associations and at enterprises, by their work collectives. I would like to know: how is your technical retooling program going, how are you addressing the problem of product quality, how are you assimilating new machinery?

[Answer] New machinery in the association is the subject of constant concern. New products today comprise one-fifth of our mix. Thanks to new machinery equal to or better than the world level, more than 90 percent of the association's products have been assigned to the highest quality category. It is competitive in both the domestic and foreign market and is supplied to more

than 80 countries in the world. Nevertheless, our specialists have always been oppressed by the way higher organizations hovered over their work on new machinery: they were compelled to prepare reports on scores of indicators and to take people away from their basic work. In 1987, we were promised that the number of indicators would be reduced, but when we counted up all the appendices and supplements, their number was just the same as it was last year, with the difference that some indicators were replaced by accounting indicators.

There is no need to convince anyone that the technical retooling of production is important for the intensification of social production, for reaching new heights in the precision, quality, reliability, and competitiveness of our products. Technical retooling is especially important to us because approximately 40 percent of the association's equipment is either worn out or obsolete, for which we are justly criticized. However, the central organs take an incomprehensible stand on this issue. Thus, according to the technical retooling plan that was prepared by the association and approved by the ministry, "Electrosila" was to have modernized 15-20 percent of its equipment each year. This is the necessary minimum for carrying out the tasks assigned to the association. But the unforeseen happened: the funds allocated to us for technical retooling were cut twice and the volume of modernization reached the level of the last five-year plan, i. e., 5-7 percent a year. At such a rate, we will not only not modernize our machine tool inventory, we will also not reduce the gap between the aging of our existing equipment and the introduction of new equipment.

One asks: what are the comrades in the central organs guided by? Who is benefited by these measures?

The transition to self-support [samookupayemost] self-financing, and complete khozraschet [cost accounting] should ensure the stability of the given norms for the five-year plan. Unfortunately, as we have seen, this principle is violated with inexplicable ease when it comes to equipment. It is still worse when these violations concern people's interests and undermine their conscientiousness toward the assigned task. This is specifically how it was when the central organs, in the process of modifying the criteria used to evaluate new machinery, with one stroke of the pen deleted more than 1.5 million rubles from the material incentive fund of the association's collective. This rash decision is reflected not only in the material incentives of the work force but, what is more important, can undermine the faith in the substantiation of the restructuring principles and can discredit them. Or another example. Our association's workers raised the question of revising existing standardization practices. Gosstandart [State Committee for Standards] reacted to the criticism by simplifying certain standards, by transforming others into recommendations, and by abolishing still others. Thus, the procedure for developing and putting new products into production was simplified, which was in the spirit of the restructuring. However, it later turned out that the standards pertaining to technology had not been modified and were still complex. What is more, the skill level of workers was absolutely not taken into account. If we followed the norms set down by Gosstandart, we would have to schedule every movement and issue workers voluminous instructions that are impossible to use. The question arises:

what should the specialists' concern be: technology and production proper or the description of technologies based on the demands of the standards; excessive detailing of all facets of labor operations? The given case is a concrete manifestation of the contradiction between the new system of management based on the autonomy of enterprises, on khozraschet, on the development of the initiative of work collectives, and the old ineffective system of administration based on regulations and controls.

The strategy of the new system, articulated in the decisions of the 27th Party Congress and subsequent plenums of the CPSU Central Committee, does not as yet have a legal basis, is not realized in the norms of economic, civil, labor, administrative, financial, and other legislation, and requires further improvement. But nevertheless, beyond a doubt the future belongs to it. The old system of management is replete with legal acts, norms, instructions, and statutes because it operates according to existing law. And we now have two parallel systems of management in operation: an intensive and extensive system, and moreover, the latter is frequently dominant because of powerful inertia, conservative thinking and conservative actions of the work force.

I would also say that the potential of practical workers to determine the directions of restructuring is limited. We frequently speak about particulars even though they are also important and timely in their way. It would seem that science is greatly indebted to practice, that science is to a considerable degree responsible for the creation of a new economic mechanism that would be firmly based on the economic laws of socialism, including the law of value, together with the use of khozraschet and other categories of commodity and monetary relations.

I have been introduced to the pronouncements of L. I. Abalkin, corresponding member of the USSR Academy of Sciences, and Academician A. I. Anchishkin regarding the role of economic theory in the practice of restructuring. My attention was particularly attracted by the following lines: "Many fundamental problems of developing socialism today have to be solved empirically by trial and error with all the negative consequences associated with theory's unpreparedness for such solutions." The errors are known. We expect economic science to make properly founded proposals on the creation of a new economic mechanism which by economic necessity would eliminate red tape and administration by orders and decrees from our practice.

[Question] The restructuring is also taking place in the activity of the central planning organ: USSR Gosplan. What do you consider to be necessary changes in its functions?

[Answer] I think that the ministry and all the more so the enterprise should not be supplanted, that their activity should not be regulated in detail, that they should not be hovered over, etc. It seems to me that it would be better if USSR Gosplan concerned itself with national economic proportions, with the perspectives of development, and with establishing guidelines for social production. The role and responsibility of USSR Gosplan should also be raised in providing economic substantiation of the level of social needs and balanced development of branches, especially in five-year plans. The efforts of

central planning organs should be concentrated on the solution of national, interbranch problems.

In conclusion, I would also like to say a few words about the following. There will obviously also be substantial changes in the structure of ministries. Having renounced administrative methods of management based on the assignment of numerous indicators and distribution functions, they should primarily concern themselves with the integrated planning of the development of branches and with the formulation of scientific-technical and investment policy. In my view, the master plan for the management of branch enterprises can only be a two-tiered system. The enterprise itself should concern itself with the formulation of production plans based on those initial data. But this requires the active use of economic levers. This does not mean that I underestimate the role of planning agencies. They have been and continue to be an integral part of our economy. But centralism in planning must be democratic.

Finally. The discussion of the Law on the State Enterprise is at an end. But when it is adopted, planning, supply and other agencies will have to guarantee its fulfillment. It is important to embark on the path of economically sound actions.

Intelligence and responsibility are demanded of planning and economic agencies specifically now, at this critical juncture. Unfortunately, the inertial of the "val" [gross output indicator] still persists. For example, the association's wage fund continues to be formed on the basis of the "val" regardless of the enterprise's real income and the quality of its product. The pricing system is also in need of improvement. Norms governing payments to the budget and to the ministry for productive capital have not yet been devised. Thus with the growth of balance sheet profit in excess of 54 percent during the five-year plan, deductions will grow to 87 percent while the increase in profit left at the association's disposal will be a mere 24.6 percent. Given such norms, will the collective be interested in higher profits? Hardly!

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DIFFICULTIES OF SHEDDING 'GROSS OUTPUT' CONCEPT DESCRIBED

Moscow PRAVDA in Russian 27, 28 May 87

[Article by N. Kizub, Candidate of Economic Sciences: "How To Shed the Gross Concept?"]

[27 May 87 p 3. First paragraph is source introduction]

[Text] Poltava--"Although we are campaigning for efficiency" stated M.S. Gorbachev, "look and see for yourselves the stupid position that the economic leaders have placed themselves in: they produced a cheap product and were scolded for producing less output in rubles. They then introduced a new innovation and realized a savings in resources and again they placed their enterprise and at times the entire branch in an unprofitable position. The time is at hand for shedding this 'gross concept', otherwise we will be unable to move forward in the interest of overcoming the expenditure mechanism."

Producer -- Consumer

The economy is full of paradoxes, both large and small. We encounter the small paradoxes on a daily basis. A simple example would be that involving jars and bottles. It is so difficult to return them to a store. Yet they are referred to as "returnable glassware" and at the store we pay a "deposit value" for them. Such empty containers clutter up our attics and balconies and also our family budgets. Meanwhile, the glassware plants confidently continue to increase (compared to the level already achieved) their production of new jars and bottles. Suction dredges draw sand from rivers and tens of thousands of tons of deficit soda ash and other raw materials are used for the production of glassware. But is it not more sensible to make repeated use of that which has already been produced? It would be more profitable both for ourselves and the national economy. But for one reason or another it is unprofitable for trade and industry. The same holds true for public catering. In accordance with scientific recommendations, vegetable and dairy dishes must predominate in our ration. But it is more profitable for public catering to feed the population macaroni or meat dishes. This is more expensive for the consumer and more profitable for the producer. Is it not true that he does not serve our purposes, but rather we must serve his?

Little has been said regarding large-scale paradoxes that have developed in recent years. Yet it has been precisely these paradoxes that have ignited fires of extravagance which have resulted in losses of billions of rubles worth of national income -- the source for our mutual social all-state budget and for our mutual well-being. In the sphere of production, the paradox of the unprofitable nature of scientific-technical innovations presently occupies first place in the area of "harm inflicted." The expression "introduce and cause harm to oneself" has become a catchword. The task of mastering the production of new equipment -- more efficient materials, equipment and instruments for the consumer -- has been a source of difficulties for the production workers. The conversion over to new methods requires a reorganization of technological processes, the retraining of personnel, it raises a risk with regard to the establishment of cooperative relationships and it creates the possibility of a disruption in the volume and delivery plans. And a chief consideration is the fact that it can result in a loss in sales volume in rubles, upon which the well-being of a producer is dependent. The NTP [science-equipment-production-consumption] chain is encountered constantly during the "production" stage, at which time scientific discoveries and inventions embodied in drawings and experimental models must be turned over to the consumer through mass industrial production.

And the prospects for a new development are quite poor if it is cheaper than the item being removed from production or if it produces only a social effect -- promotes protection of the environment, sanitizes working conditions or produces a savings in natural resources. Let us take peat fertilizer as an example. The effectiveness of such fertilizer has been fully proven and yet it is still not being employed on an extensive scale. It is not being produced on the scale required for agriculture, since peat is much cheaper than mineral fertilizer. The same holds true with regard to the production of low tonnage chemistry. This is a minor consideration for Minkhimmash [Ministry of Chemical and Petroleum Machine Building], which rules over heavy tonnage items of equipment for large-scale chemistry. It is for this reason that the development of products from waste materials of the metallurgical industry and the utilization of by-products in the chemical industry are considered to be unprofitable.

Should not the following be viewed as paradoxes: the existence of unnatural (for a socialist society) contradictions between producers and consumers, situations in which it is unprofitable to produce cheaper products, when the inventors of new types of products are often considered to be persona non grata and the most effective developments for the national economy often lie on shelves for decades, since there are no economic organizations which wish to produce them for fear of thereafter being unable to fulfill their gross planned tasks. In linking together the problems of acceleration and the NTP, it can be stated that acceleration should be carried out to the maximum possible degree only when the use of scientific-technical innovations becomes the most profitable means for carrying out long range and current production plans. As stated in the classics of Marxism, production requirements advance science much more rapidly than do dozens of universities. However, "gross" considerations still tend to suppress all of the other requirements and interests of production workers.

There is but one root for the small and large paradoxes which exist in the economic mechanism, despite their many differences and peculiarities as manifested in the various branches. This is the expenditure method for planning and evaluating the work of production collectives, the so-called expenditure gross.

Gross Magic

In criticizing Prudon, K. Marx wrote: "...there is nothing more erroneous or absurd than that of exercising control over individuals and their total production based upon exchange value and money" (K. Marx, F. Engels. Collected Works, Vol. 46, Part 1, p 102). Thus, merely the refusal to use exchange or sales prices for the purpose of comparing manufactured products can undermine the expenditure gross. Otherwise we will never be free of the depraved interest of economic organizations in raising expenditures and prices. Let us take a simple example. If the production cost for a particular instrument is 1,000 rubles, then for an average branch profitability of 5 percent its wholesale factory price will be approved in the amount of 1,050 rubles. But if very expensive component parts are embodied in it, parts which raise the initial expenditure to 3,000 rubles, then the instrument will produce several times more profit. Accordingly, the volume of gross and marketable output will increase.

Labor productivity is calculated by dividing the gross output by the number of workers engaged at the enterprise. It also tends to increase as the level of expenditure prices increases. Thus it turns out that it is possible to increase the volumes by increasing the number of products being produced and also by raising the initial production cost and in this manner inflating the wholesale factory prices. As is known, it is more intelligent to go around a mountain rather than climb it.

For the information of those who are not economists. The volumes of marketable and gross output coincide at a majority of enterprises. A change in the stockpiles of unfinished construction is taken into account in gross output only in the case of an extended technological cycle. Unfortunately, the indicator for gross output is sometimes confused with gross turnover. The latter is defined as the total amount of finished output by individual processing stages. For example, the gross turnover of a textile combine includes the cost for yarn, the cost of the strong fabric produced using this yarn and the finished output. The greater the number of processing stages, the greater will be the gross turnover, as a result of repeated accounting. The output volume for any ministry is determined as the total amount of gross output by individual enterprises, that is, the method of gross turnover. The volumes of inflated gross are also created in ministries as a result of unjustified cooperation, with a product being moved through an entire series of enterprises from the Ukraine to the Far East. Here additional components are successively added to them and all preceding expenditures are included in the production volumes of these plants and ministries on the whole.

In order to eliminate the distorting effect of prices, many enterprises limit themselves to planning only the natural indicators -- in items, tons, meters. But then an open question remains: how is it possible to evaluate in a

generalized form the operational results of any enterprise? Let us take a chemical combine which produces very different types of products -- from ammonia to nitro dyes. How can all of this be summarized and how can it be compared against the number of workers and their wages. To this one should add that natural indicators can also be converted into a gross fetish. A gross increase in the production of machine tools and machines in number of items and equipment in tons would produce a mass of unoccupied positions, which would be a serious cause of a shortage of machine tool and machine operators, of the use of deficit equipment during a shift, a drop in the output-capital ratio and a disproportion in the wages for ITR's [engineering and technical workers] and other workers.

Our losses caused by natural indicators in the extractive branches are especially obvious. It is precisely for this reason, for example, that a ministry which is responsible for the extraction of iron ore, does not require ferrous metals, aluminum oxide or other materials. And in turn the Ministry of Construction Materials, when extracting sand and gravel, displays no interest in procuring iron, semi-metal ores, aluminum oxide, phosphorites or potassium salts. Everything that is not needed by a specific ministry is moved to a dumping ground. On the plain where ores of the Kursk Magnetic Anomaly are processed, man-made mountains have sprung up to such an extent that local residents purchase skis and ski on them during the winter.

In order to finally put an end to the possibility of enterprises increasing prices and gross output by means of repeated accounting, inflating the material-intensiveness of new products and also creating an expanded gross for the ministries, various work measurement gauges were introduced into our economy commencing in the 1960's. An evaluation of output mainly in expenditures for wages was repeatedly declared to be "ideal" by the indicator (normative processing cost -- NSO in the early 1960's) and by a "contribution to national income" -- normative-net output (NChP) in 1979.

But the essence of all of these norms was the same -- expenditure. Just as in the past, an evaluation of the work of a producer in terms of his expenditures remains stable. Only a less vicious paradox concerned with inflating manual labor expenditures in the principal production operation began replacing the paradox of inflated material expenditures and inflated cooperation. Actually, the initial base for computing labor norms is the amount of wages for the principal piece-workers. The greater it is, the higher the overall norm obtained by adding to this base a conditional profit and the wages for other categories of workers, the number of which is several times greater than the number of piece-workers. As a result, the enterprises are deprived of an incentive for reducing manual labor in the principal production operation.

Goal and Means

Certainly, during the course of eliminating interest in an inflated gross concept, the baby -- specialization and cooperation -- must not be washed away with the water. Indeed, division of labor is the basis for the mechanization and automation of specialized production operations and for raising social labor productivity. In addition, net output proper (gross output minus material expenditures) is only a part of the gross consideration. A

conversion over to net output, although it aids in achieving thrifty expenditures of material resources, nevertheless may camouflage the expenditure gross through the achievement of high rates of growth, which many would like to attribute to acceleration.

Thus, any modification of the expenditure gross creates goals for the economic executives which are in conflict with the national economic interests. In order to fulfill and over-fulfill the plan for expenditure indicators, an increase in the primary expenses and growth in the wholesale prices remain profitable. An unsuitable goal brings forth unsuitable means. The magic of the gross concept consists of an illusion of the possibility of carrying out a plan by means of various distortions and through the production of more profitable products. A gross figure is a well known indicator and the means for distorting it are well known. Up until recently, the economic executives were successful in their use of these unsuitable means.

However, the times have changed. Stronger control is being exercised over price formation and the requirements for product quality have increased. In carrying out the plan for deliveries, only the requirements of a consumer are being taken into account at the present time -- the purpose for which he concluded a contract with a supplier. State acceptance is undermining considerably the dictates of a producer. It is difficult for an economic executive who is only able to distort the gross concept. At the present time, he has already lost his orientation -- what is good for him? One produce it good in terms of profitability, another is profitable in terms of net output but it furnishes very little profit and still a third is advantageous from both standpoints but it generally is not desired by a consumer. How can these incompatible factors be combined and how is it possible to pray to three gods at once?

However, let us return to the initial positions. Any enterprise is simultaneously a producer and consumer. And as a consumer, it gains from achievements of the NTR. Thus why is it necessary for it to profit as a producer? And this means that the plan must furnish it with purposefulness in the interests of the national economy and that an economic executive must produce cheap products, raise the quality of his goods, produce new equipment, develop more efficient materials and products for the consumer, achieve savings in the use of natural resources and make full use for this purpose of all NTR discoveries and inventions.

The gross concept must be replaced by indicators for high goals by the socialist society, goals which make the work of production collectives profitable to an extreme -- maximum growth in quality, use value of the products produced and minimal expenditures per unit of useful effect contained in the products. This will be discussed in the final part of the article.

[28 May 87 p 4]

[Text] Expenditure Price in the Denominator

If one can view the "gross concept" of national economic contradictions as a large ball of twine, then it becomes understandable why it is impossible to

solve only individual contradictions on a local basis. Nevertheless, we have uncovered the first hook upon which the entire concept of today's economic contradictions becomes caught up on -- it is the direct dependence of an evaluation of the work of an economic organization upon the magnitude of expenses, particularly upon the level of the wholesale factory prices or norms, established in accordance with the expenditure principle.

Obviously, with the elimination of this hook, there will be a need for eradicating the paradoxes of the gross expenditures. Knowledge of the arithmetic required for the division of fractions is sufficient for accomplishing this: in order to create an inverse dependence upon a particular value, instead of a direct one, it should be placed in the numerator. Thus the anti-expenditure indicator may become merely a fraction or a relative value, in the denominator of which we include all types of expenditures and the wholesale factory price of the product. We will refer to it as KER [koeffitsiyent effektivnosti raboty; coefficient for operational efficiency].

Let us begin with a product. Let us assume that an enterprise can produce two types of filters which are used for the same purpose -- one made from cotton cloth and the other made from synthetic material. The cotton filters are more costly. The wholesale factory retail price for such a filter is 60 kopecks and for a synthetic filter the cost is only 40 kopecks. Obviously, these figures are conditional and yet the situation is a real one. Under existing conditions, an enterprise must use all means at its disposal for preventing the production of synthetic filters, since the complete replacement by them of cotton filters will pose a threat in the form of a reduction in the gross output volume of 33 percent (40:60). Thus the national economy, as the consumer, will lose 20 kopecks for each filter. But if the fraction is inverted, a different situation prevails. The national economic coefficient for effectiveness in the production of synthetic filters will be 1.5 (60:40). Such a level for the KER signifies that for each ruble expended by the consumer for procuring new filters, a savings of 50 kopecks will be realized and for each filter -- 20 kopecks (60-40).

Many disputes are arising at the present time as to how to determine correctly the wholesale factory price and how to make its value conform to the socially needed labor expenditures. However, these discussions have already been futile for several dozens of years. A momentary value (price approved at a given moment) will never equal the average value for the socially required expenditures. This makes no difference with regard to who halts the river. Indeed, society attaches importance to where the river is going and the type of work it can carry out. The same holds true for wholesale factory prices. The chief consideration -- to redirect the interest of the producer correctly in terms of the national economy: to terminate interest in inflating all types of expenditures and to evaluate fairly the services of an enterprise aimed at lowering the expenses of the final consumer of a product. Thus the KER must provide for such social fairness. The lower the price, the higher its relative value will be.

If 10 percent of the filters produced at an enterprise are synthetic and 90 percent are made out of cotton, then the average KER will equal 1.05 ($1.5 \times$

$0.1 + 1.0 \times 0.9$), but if the production structure is also "inverted" in the required direction: 90 percent of the filters will be produced more cheaply -- out of synthetic material, then the average value for the coefficient of effectiveness will increase to 1.45 ($1.5 \times 0.9 + 1.6 \times 0.1$). It is fully understandable that the second variant should be stimulated to the maximum possible degree.

But where will the money come from for such stimulation? There is but one answer -- the earnings of the enterprise proper must be distributed in a fair manner. Let us assume that the profit from the production of filters in the first instance amounted to 100,000 rubles and in the second -- 80,000. At the present time, a decision has been handed down in connection with an experiment being conducted at the Sumy Machine Building NPO [scientific production association]: 30 kopecks of each ruble will be added to the budget with the remaining 70 kopecks being left at the disposal of the enterprise. Since 1 January 1987, a large number of enterprises has already converted over to the system of complete self-financing using one's own profit. But one question still remains unresolved -- according to what principle will the profit be divided up and what will this ratio depend upon in the future? The introduction of an evaluation of operational efficiency according to the KER may help in obtaining a socially fair solution for this problem: one's own output will produce greater results for the national economy -- a larger amount of profit will be left at one's disposal and fewer fines will be levied.

For example, if the KER equals 1.05, an enterprise will obtain only 30 kopecks per ruble of profit, or 30,000 rubles from 100,000 rubles of profit. And if the KER equals 1.45, it will be due 50 kopecks, that is, if the profit is 80,000 rubles the enterprise will have at its disposal a more absolute amount -- 40,000 rubles. Once again it should be noted that these figures are conditional. From a mathematical standpoint, no great difficulties should be encountered in preparing a long-term scale for dividing up the profit depending upon the KER value achieved. Moreover, it should be done in a manner such that it will be more profitable for an enterprise which produces Group A products on a mass scale to lower the wholesale factory prices, in the interest of increasing the average KER value, and thus raise its proportion of the profit obtained. If the profit will be negligible, a scale could be developed for increasing the wage fund depending upon the value for the summary KER achieved.

The profitable production of cheap types of products for society (upon the condition that their consumer properties are retained) is also profitable for the enterprises. Cost accounting interest in raising the overall amount of profit for enterprises and the budget is fully retained.

It is noted that we have already seriously shaken the stability of the principal paradox -- lack of interest in scientific-technical innovations. Indeed, filters made from synthetic material is just such an innovation. They are the result of the invention by chemists of a synthetic filtering fabric. Nevertheless, the cheapness of this new development is only an exception to the general rule. From an economic standpoint, NTP [scientific-technical progress] sometimes works in reverse. The majority of new developments are

more labor intensive and are more costly as far as production is concerned. On the other hand, an increase in the number of units of useful effect exceeds to a considerable degree, in an overall national economic computation, the increasing level of expenditure prices. This peculiarity of NTP innovations is presently being used for determining reimbursement and for computing the annual economic effect, but it is not affecting the gross evaluations of the operational results of enterprises.

Thus, let us take still another variant of the example with filters. Let us assume that they can be made using a synthetic material which increases their service life by threefold and that a filter made from this material costs 90 kopecks. In this instance, an enterprise-consumer will be able to use one synthetic filter in place of three basic cotton filters. In addition, its operational expenses will be less.

But if the new and expensive filter replaces three of the old type, then the maximum possible price must be equal to 1 ruble and 80 kopecks (60×3). Moreover, it can be calculated that each filter will produce a savings of 40 kopecks during its period of use. Thus a chemical combine which uses the filters should pay the enterprise which produces them 2 rubles and 20 kopecks per item. In foreign literature, this value is referred to as the consumer price or the price for quality and also as a shadow price.

For the information of economists and non-economists. Unfortunately, our political economy does not include any prices for quality (consumer prices). And yet in real life we operate and are guided only on the basis of such prices when making payments for any goods. Let us take an example: why does an individual decide to purchase a single ticket? In Moscow, a monthly ticket for all types of transport costs 6 rubles. Thus a Moscow resident must estimate how much the actual trip costs him. Let us assume that it costs 9 rubles. Thus, having purchased a "single" ticket for 6 rubles, he saves 3 rubles. The coefficient of effectiveness for his expenditures as a consumer will be 1.5 ($9:6$). This also holds true for any individual who purchases a refrigerator, television set or even a chicken on the market. In addition to economic considerations -- in the form of the savings realized in the purchase of a ticket -- purely social considerations also come into play: it is more convenient not to have to worry about 5-kopeck coins; it is better to watch a color picture and a black and white television set is simply not as prestigious and a domestic chicken is more tasty. Thus there was the 9 rubles in the everyday sense and also the consumer price which he should have paid for satisfying his own requirements. In addition, the value for the social effect should have been added to the 9 rubles. This is all taken into account by an individual in a rather rough sense and yet he must necessarily compare his individual consumer price against the sales price and his own actual expenditures.

But if any sober-minded individual proceeds in this manner, why is it that use is not made of consumer prices on an all-state scale for evaluating the operational efficiency of production collectives, based upon the quality of the products? True, the price for the quality of products must be based upon the average expenditures prevailing throughout society as a whole for satisfying specific social or personal requirements. The positive difference

between the sum of the prices for quality and the purchase prices for the means of production constitutes the basic source for growth in social labor productivity during the coming years. In the case of consumer goods, the value for the population's actual profit realized from having improved the quality of the goods procured and accordingly from having raised the standard of living for the people will be determined in this same manner.

In a socialist economy, the prices for quality should be made public and they should be pointed out on the rating plates for new equipment, in accordance with the individual items of effect (stacking them up in the manner of "bricks"). In such instances, the KER for a product appears as a relative expression for the price of quality, making it possible to compare the national economic effectiveness for all types of products.

The prices for quality must be approved by an all-state non-departmental organ, as is being done at the present time by Goskomsen [State Price Committee] for the usual sales and wholesale factory prices -- on the basis of draft prices developed by producer-enterprises or their branch NII's [scientific research institutes]. But the price for quality is a type of quality guarantee which is being approved at the present time by Gosstandart [State Committee for Standards of the USSR Council of Ministers]. A level for quality at which the KER equals 1.0 indicates that the product conforms to the standard and a higher KER reveals the degree to which the requirements of the existing standard have been exceeded.

Hence it logically follows that when introducing quality prices into the economic mechanism, their levels, the amounts of the wholesale factory prices and also the standards must be approved by a single state committee for prices and standards. In the future it must exercise control over the product quality which it approves, by organizing non-departmental acceptance at producer-enterprises, by implementing realistic control over the effectiveness of their output at their own testing centers, equipped with modern equipment and stands, and also by carrying out checks on the quality of products in the areas of immediate use -- where the consumer is located.

Making the Situation Profitable

Under socialist conditions, the prices for quality must be used not for making payments to the consumer or even for raising the profitability level in sales prices, but rather for evaluating the national economic effectiveness of the work of a producer. Thus, for all practical purposes they appear as norms for effectiveness and quality. They can be used as the basis for developing two new indicators for describing the true contribution by enterprises and branches towards satisfying the social requirements more completely with fewer expenditures:

-- absolute -- the OPTs [obyem potrebitel'noy tsennosti; volume of use value] for products and services, determined by a measurement of the products and services in norms for effectiveness and quality;

-- relative -- summary coefficient for operational effectiveness, obtained by dividing the OPTs by the value of the products and services in wholesale factory and sales prices

If these indicators are considered to be the basis for planning and evaluating the work of economic organs at all levels, then the use of scientific-technical innovations becomes a truly important means for the successful fulfillment of production plans. At enterprises of an individual and light series type, the mastering of the production of new and more economic types of products, with use being made for this purpose of the latest discoveries and inventions, will be most advantageous for growth in the numerator of a summary KER and in the OPTs as a whole. In the case of mass production of a known product, there will be a persistent requirement for using new equipment for mechanization and automation and for the rapid mastering of new technologies.

The clear sense of the KER fraction, the achievement of growth in the KER and OPTs and the intelligibility of the operational results of any enterprise to all concerned, from a worker to a minister, and the conformity of these results to the desires of all conscientious workers in a socialist society to increase the social usefulness of their labor, truly makes it possible to activate the human factor and unite it with the NTR [scientific-technical revolution].

We have already examined the manner in which the production of cheap products can be made profitable based upon new innovations and how to utilize inventions in a profitable manner for the production of new and effective, albeit more expensive, products. In accordance with an examination by GKNT [State Committee for Science and Engineering of the USSR Council of Ministers] or Goskomizobreteniy [State Committee for Inventions of the USSR Council of Ministers] of the scale for KER over an extended period of time, a value can be established which will conform to the international level for output in a given branch. In this manner it is possible to avoid the wanton method of planning based upon that which has already been achieved. The highest goal for which a specific enterprise strives will automatically be given over to the KER scale.

In the process, all members of a collective will know what material and moral incentives they will receive for overcoming each subsequent level in the value for KER. Using norms for effectiveness and quality, it will be possible to eliminate local deficits, for example in spare parts, which at the present time are characterized by their cheapness and labor-intensiveness. The norms would make it possible to solve the problems concerned with uniting the interests of MNTK enterprises, achieving more complete utilization of mineral deposits, realizing profits from waste-free production operations, evaluating deliveries on the basis of timeliness and radically eliminating the dictates of a producer. A chief consideration is that of ensuring that the new anti-expenditure indicators provide the enterprises and branches with a unified orientation in behalf of the national economic interests.

GOSPRIYEMKA DISCUSSIONS CONTINUE

Gospriyemka at MKTS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Jul 87 p 2

[Article by V. Belov, SOTSIALISTICHESKAYA INDUSTRIYA special correspondent: "Indulgence No 14-176"; first paragraph is source introduction]

[Text] Moscow--A huge banner hung over the checkpoint at the Moscow Hard Alloy Combine imeni S. P. Solovyev [MKTS] at the beginning of the year: "MKTS Changed Over to State Acceptance of Products." One could think that appropriate pre-rations for the innovation were made there and that the combine's managers hand in hand with representatives of the State Committee for Standards were successfully solving the key state problem. However, only behind the checkpoint, at this enterprise's shops, could one realize that the banner was nothing but a tribute to form, an echo of recent times, when it was possible to deceive all honest people, preaching (in words) one thing and professing (in practice) another.

Gospriyemka began to operate at the combine during the preparatory period--at the end of last year. Already then MKTS managers realized that, if the combine delivered products under full state control, it would not be possible to fulfill the plan. Consequently, they decided that it was necessary to somehow weaken the requirements of workers at the State Committee for Standards. Imagine, they found such a method with the help of... the State Committee for Standards itself. The Soyuztverdosplav Production Association, which includes the MKTS, bowed humbly before the State Committee for Standards and letter No 14-176 signed by V. Yunitskiy, deputy chairman of the committee, appeared on 30 January of this year. It began with the following words: "Taking into consideration the lack of readiness at the MKTS for fulfilling individual requirements of standard-technical documents, as well as taking into account consumers' consent to a temporary deviation from the requirements for the manufacture of hard alloy products, the State Committee for Standards considers it possible to allow the MKTS to deliver products with deviations from... until 1 April." The numbers of all-Union state standards and amounts of tolerance, by which it is possible to "deviate," are enumerated subsequently. This in spite of the fact that, according to the decree of the same State Committee for Standards, changes, in which the requirements placed on the precision of hard alloy billets were even stricter than stipulated by

all-Union state standards of 1975-1976, were put into effect as of January 1987. Thus, letter No 14-176 annulled not only these changes, but watered down the all-Union standards themselves, which were more than 10 years old.

What has turned out? For more than 10 years the combine has produced certain types of billets with deviations from the standards, counting on the uniqueness and scarcity of its output and the undemanding nature of consumers, who will say thank you even for nonstandard articles.

Yes, this was the case. But, we might as well admit, the State Committee for Standards closed its eyes to this. However, when gospriyemka began to stand in the way of rejects, the combine's carefree life ended and from the first days of January it seemed to grow quiet. The first 10-day period passed--the plan was not fulfilled, the second, the same. The third 10-day period began. The situation heated up. Something will happen! Only wordly-wise workers made wiser by experience and knowledge, looking at gospriyemka workers from time to time, chuckled: "It is all the same, they will accept everything. Where can they go?" And they were right! On 30 January the combine was granted the same indulgence No 14-176 and temporarily absolved of its sins... And a rush job began.

In the interview of SOTSIALISTICHESKAYA INDUSTRIYA published on 10 March B. Sokolov, first deputy chairman of the State Committee for Standards, who was asked what should be done in such situations, said that the State Committee for Standards could give permits for a temporary output of products with deviations. However, enterprises should introduce order during that period.

Yes, there are situations during which for temporary tactical reasons, to be sure, flexibility should be manifested with respect to gospriyemka. However, what has turned out at the hard alloy combine? Giving an indulgence in the evaluation of products for a quarter, the State Committee for Standards realized perfectly well--it could not fail to do so--that that period was extremely short to rectify the situation in which the production facility found itself. When that quarter ended, it became very obvious that the hard alloy combine was transferred to gospriyemka without due regard for its real capabilities. It was simply decided that somehow it was not proper not to keep step with the times. For the sake of a report on "involvement" an enterprise not prepared for gospriyemka was transferred to it.

In general, the January rush work at the combine can be still explained somehow: The letter from the State Committee for Standards arrived at the end, not the beginning, of the month. However, why were such "heroic" efforts to save a burning plan (even if with a stress on production volume!) also made there both at the end of February and at the end of March, but in April the enterprise did not fulfill the plan even for a single indicator? After all, favorable conditions for the delivery of products with deviations from the standards had already been created for the combine.

The essence does not lie in the excessive strictness of all-Union state standards. The present technical level of production of individual items and its organization at the MKTS have long lagged noticeably behind the demands of the times. Formerly an advanced enterprise, the combine was unable to

reorganize all production on a modern basis. It began to skid and to mark time and, as a consequence, to surrender the positions it won one after the other. Ten years ago it counted on the new equipment purchased abroad. However, even it, squeezed, as in shop No 2, into the Procrustean bed of technology imperfect according to present criteria, did not become the secret "rescuing wand." Automatic equipment, manual labor, and antediluvian equipment get along together in the most incomprehensible way at MKTS shops and outgoing control and the packaging of finished products (tens of thousands of hard alloy billets!) are carried out manually, almost on the knees, owing to the newly formed crowded conditions on the premises. Technical documents have been neglected at the combine. It has forgotten what planned preventive maintenance is. Working conditions at most production sections are extremely difficult. According to the combine's sanitary laboratory, the norms of the maximum permissible concentration of harmful substances in the air medium of production premises were exceeded 2- to 5-fold and of graphite dust at shop No 2, 20- to 25-fold (!). Thus, what kind of product quality can be obtained with such a production organization and such an attitude toward people's health and general physical and mental state?

Gospriyemka, having begun to operate at the combine, has uncovered such flaws in the production of hard alloy billets in all reprocessing that, really, any indulgence for the enterprise turns out to be nothing but a disservice. However, the State Committee for Standards, without a second's hesitation, extended the period of validity of its letter No 14-176 for another quarter.

The temporary leniency of the State Committee for Standards could have been justified if this measure had forced the management of the MKTS and of the Soyuztverdosplav Association of the USSR Ministry of Nonferrous Metallurgy to take urgent measures to introduce order at the combine, to strengthen technological discipline, and to improve people's working conditions. However, this did not happen. Another thing puts us on the alert: the attempt by combine managers to demonstrate at all costs to the State Committee for Standards that MKTS products, which are produced even with deviations from the standards, are in excellent demand and all-Union state standards for some form sizes of billets are too demanding and need to be revised.

We would like to note that they began talking about these all-Union state standards only when gospriyemka literally shoved slipshod workers into their faces, but they were silent for more than 10 years, as though there was not so much as a mention of these all-Union state standards. They manufactured nonstandard products and couldn't care less--they lived peacefully and received bonuses, thanks, and awards. The consumer did not bother to complain about any deficiency--once again he stands with a visored cap at the checkpoint. Whatever you give him, he will take. Only the consumer who has waited, but has not received the ordered assortment, suffers. For the sake of the plan with a stress on production volume, which the combine has been pursuing for a month, he is not concerned with the products list...

* * *

The period of validity of the letter from the State Committee for Standards permitting the shipment of the hard alloy combine's products with deviations expired on 1 July. We contacted S. Popleteyev, manager of state acceptance at the enterprise, and asked him to discuss the present state of affairs.

"We have prohibited the sale of the articles that have accumulated at the warehouse," stressed Sergey Ivanovich, "because they do not meet the requirements of standard documents."

As we see, the problems of getting the enterprise out of the deadlock during the 6-month period of validity of this indulgence have not been solved anyway. There is a need for a prompt intervention by the USSR Ministry of Nonferrous Metallurgy for the adoption of fundamental measures to improve the situation at the combine.

Gospriyemka at Television Plants

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 4 Jul 87 p 2

[Interview with L. Lapidus, deputy chief of the Main Administration of State Acceptance of Products of the USSR State Committee for Standards, by L. Skoptsov, SOTSIALISTICHESKAYA INDUSTRIYA correspondent: "The Screen Is Becoming Brighter"; date and place not specified; first paragraph is source introduction]

[Text] "I personally have three color television sets. Why? Because one works and the other is under repair and then vice versa. Another set is in the kitchen. Of all the equipment I have, only one iron has served me without repairs from time immemorial," G. Akimova, a turner from Podolsk, writes to the editorial department. There are many things behind this fact: The higher standard of living, television, which has firmly entered our way of life, and, unfortunately, the still low reliability of domestic television equipment. State acceptance was introduced at 27 television plants as of 1 January. How did this affect quality? Our correspondent L. Skoptsov talks with L. Lapidus, deputy chief of the Main Administration of State Acceptance of Products of the USSR State Committee for Standards.

[Question] Lev Yefimovich, frequent doubts are expressed in readers' mail: Does another army of controllers justify itself?

[Answer] In other words, have television sets become better or not? Judge for yourself. There was a steady increase both in claims and in guaranteed repairs at plants during all the preceding years. For the first time it has become possible to break the negative tendency: If a comparison is made with the first quarter of last year, during this quarter the level of claims has dropped by 7 percent and of guaranteed repairs, by 7.5.

Manufacturing plants also stand to gain. Expenses on the elimination of defects have been reduced by almost 6 million rubles.

There is another indicator of the success rate of our efforts--pretrade repairs of television sets. Expenses on them have decreased from 1 ruble and

90 kopecks to 1 ruble and 55 kopecks per television set. The nature of repairs has changed strikingly. Previously, 1 out of 10 television sets rejected in a store did not turn on. Now a serious breakdown is very rare. There are mostly chafes and scratches and tuning needs to be readjusted.

[Question] To be sure, the facts are convincing. Only does this mean that very soon the color television set will not distress the customer at all?

[Answer] Unfortunately, the risk that the customer will get a set with a hidden defect does not disappear even with the introduction of gospriyemka. The theory of reliability indicates that the number of guaranteed repairs is closely connected with the failure interval. When the failure interval was 2,600 hours, 43 percent of the articles entered guaranteed repair shops. When it reached 5,000 hours, 29 sets per 100 had to be repaired during the first year of operation; with 7,000 hours, only 19 sets. Seven thousand hours is the lower limit of the world reliability level and we have succeeded in attaining it here and there--at the Vitebsk Television Plant, the Lvov Elektron Plant, and the Minsk Gorizont Plant. New all-Union state standards direct us to increase the interval failure to 10,000 hours, as a minimum, by 1990. However, even then 14 per 100 sets will not escape guaranteed repairs.

[Question] Frankly speaking, these are joyless prospects. Despite all, one out of seven customers is doomed to suffer with the expensive purchase even during the first year.

[Answer] I don't agree. The consumer suffers not so much because of the low reliability of the television set as because of the low quality of postsale service. A total of 10,000 hours of trouble-free operation is a fully acceptable level of reliability. In the best foreign models it is already close to the theoretical limit, that is, 13,000 to 15,000, but no one thinks about curtailing the service. Incidentally, its level is one of the important components of competitiveness.

So, we must go to the consumer from both sides. Here, in particular, there is another such step. We eliminated the preferential regime of introduction of new models and during 3 months of gospriyemka operation--from January until March--the failure interval of the Minsk Gorizont-Ts 355, for example, increased 1.7-fold--up to 6,000 hours. And this is not the limit.

But Yunost-Ts 404 did not withstand reliability tests. It was necessary to stop acceptance for 2 and 1/2 months and to replace the kinescope. Owing to the unacceptably low level of the failure interval, the acceptance of the Omsk Kvarts Ts-208-1 and of the Voronezh Rekord VTs-381 was stopped. As experience shows, the measure is effective: Repeated tests usually give excellent results.

[Question] Reliability and durability are the sorest subjects. However, consumers are also disturbed by the clarity of the image, brightness and richness of colors, design, electric power consumption, and weight.

[Answer] As yet gospriyemka does not have a direct effect on consumer properties of articles. Our task is to see to it that a set fully corresponds

to the all-Union state standard and standard technical documents. The maximum that can now be expected is to fully uncover the existing potential of the quality of manufacture and, believe me, it is quite considerable.

It is also important to avoid a backward movement, but there are such attempts. Often there is a shortage of high-quality accessories and then "new" models with worse consumer properties appear. For example, the Voronezh Elektrosignal Production Association is preparing the black-and-white Rekord-V350-1 for production. The planned model not only does not comply with the requirements of the new all-Union state standard, but also is greatly inferior to the well-known Rekord-V312. In order to bypass the barrier of state acceptance, another model--Rekord-V350--was subjected to acceptance-transfer and qualification tests.

Nevertheless, I can't help dwelling especially on the following factor: The unfounded criticism of our television sets, which has become fashionable recently, does not correspond to reality. The whole trouble lies in the fact that the Soviet consumer is deprived of competent advertising and at times it is difficult for him to separate idle conjectures from objective facts, especially as these facts quickly change for the better. It is customary to go into raptures over Japanese sets. But if the simplest test is performed--the "picture" is viewed from a good video tape recorder--it will be better on a well-tuned Soviet television set, because the resolving power is higher: 625 scan lines as compared to 400, which are accepted in Japan and the United States.

The circuit engineering of new generations of color television sets is at a high average world level. However, it is not yet possible to uncover all its advantages. The obstacles are not fundamental, but under our conditions they become difficult to overcome. For example, the limit of brightness of our kinescopes' colors is 200 to 230 candelas, but in the best world models, 300 to 400. As in most other cases, everything rests on the quality of initial materials--glass and luminophors...

[Question] With what can state acceptance help here?

[Answer] First of all, we are already helping, primarily by giving a true, objective evaluation--it is beneficial to this matter.

Second, it would make sense to expand state acceptance to suppliers of accessories and materials. Owing to them, assembly conveyers are constantly overloaded and receipt control, instead of evaluating quality, is forced to engage in grading, otherwise production will stop altogether. This is now the main barrier and it must be removed. For one television model it is possible to select 30 to 50 basic suppliers (there will be no more) and to build a distinctive pyramid, whose top is assembly. State acceptance officials will link together the technological chain, which is now broken by departmental and localistic interests. This will give a tremendous economic effect both for the manufacturer and the consumer.

Here is a simple example. Thirty percent of the production capacities of plants are engaged in "training" television sets. They are test-operated for

only 100 hours, but for full confidence they should be test-operated for 250 hours, as a minimum. Similar tests of accessories, on which suppliers "economize," will be 2.5-fold cheaper than trial runs of finished television sets.

[Question] Thus, gospriyemka will have to move both in depth, to scientific research and experimental design developments, and in breadth, to subcontractors and suppliers?

[Answer] Yes, and we are preparing appropriate proposals for the government.

[Question] Lev Yefimovich, this is last question. It is well known that the appearance of nondepartmental controllers at enterprises has never been painless. On the threshold of expanding this field of activity, what lessons have you learned for the future?

[Answer] At a well-organized production facility state acceptance officials are considered allies, but where exaggerations are made and successes are trumpeted, naturally, they are met with extreme hostility. Personally, however, I have no doubt that with party and state support, which has already been formed, together with production workers we will see to it that the consumer receives a reliable television set.

Gospriyemka in Electrical Machine Building

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Moscow STANDARTY I KACHESTVO in Russian No 5, May 87 pp 3-10

["Round-table" discussion recorded and prepared for the press by L. N. Alperin; organized by the journal STANDARTY I KACHESTVO at the Moscow Electrical Machine Building Pamyati Revolyutsii 1905 Goda Plant: "Gospriyemka and Enterprise Services: One Goal, Joint Work"]

[Text] On 10 February of this year at the request of the editorial department of the journal STANDARTY I KACHESTVO gospriyemka workers and managers at the Moscow Pamyati Revolyutsii 1905 Goda Electrical Machine Building Plant gathered at the enterprise's round table in order to exchange views on the first experience in joint work on ensuring a stably high quality of product manufacture, as well as the ways, methods, and means of increasing the efficiency of this work.

The following took part in the discussion: Albert Aleksandrovich Vlasov, gospriyemka manager; Yevgeniy Nikolayevich Cheprakov, gospriyemka representative; Boris Izrailevich Shneyerson, deputy plant director for production; Sergey Sergeyevich Kochetov, deputy plant director for quality; Valentina Nikolayevna Orlova, chief designer; Mikhail Gerasimovich Lapidus, deputy chief technologist.

Irina Vladimirovna Matveyeva, acting deputy editor-in-chief of the journal STANDARTY I KACHESTVO, was the moderator of the "round table."

Intentions of the Editorial Department

Moderator: The January (1987) Plenum of the CPSU Central Committee noted that restructuring has become a reality nowadays. However, everything that is new does not get on its feet immediately, but tests its strength in the fight against things of the past.

This fully applies to such an element of the economic mechanism as state acceptance, which is intended to ensure not only the stoppage, but also an effective prevention, of the output of poor-quality products.

Our discussion is held during the period when the first, sharpest impressions from the introduction of gospriyemka have worn off. Daily work is going on. The time has come to see how the mutual relations of gospriyemka with enterprise collectives are built and how the new requirements and conditions are incorporated in the system of relations formed at the plant.

We picked the Pamyati Revolyutsii 1905 Goda Plant not accidentally.

The point is that until now, in order to provide assistance to gospriyemka bodies during the difficult period of formation, the editorial department has tried to throw light on the experience of trailblazers, those who were the first to check the basic principles in practice and to perfect the forms and methods of work of the new nondepartmental control service in the course of the experiment that began in the spring of 1985.

A selection of materials on the lessons and conclusions of the experiment conducted at three enterprises in the Armenian SSR and on their utilization during the organization of and support for successful state acceptance work at the republic's other enterprises was published in the January issue of this year. The journal's February issue sheds light on the experience in transforming the representation of the State Committee for Standards into state acceptance of products at the Chekhov Power Machine Building Plant and in the April issue, at the Leningrad Elektrik Plant.

In January, when gospriyemka began to perform its functions in a full volume at the country's 1,500 enterprises, the editorial department, having expanded the search for advanced experience, first of all, turned to large well-equipped and organized enterprises relatively satisfactory from the standpoint of product quality. Therefore, data on the formation and establishment of gospriyemka at the Moscow Vtoroy Chasovoy Zavod Production Association will be published in the March issue and at the Tashkent Agricultural Machine Building Plant, in the April issue.

Now the time has come to show the viability of gospriyemka under more difficult conditions as compared with those shown in previous publications. According to the evaluation of the USSR State Committee for Standards, the conditions at the Pamyati Revolyutsii 1905 Goda Plant are such. This is the first reason why we are here today.

The second lies in the following:

In all the mentioned publications the editorial department paid special attention not only to the mechanisms of gospriyemka effect on an enterprise, but also to the forms of its interaction with all its services and subdivisions during the solution of problems of improving product quality. However, it turns out that at all the enterprises, with which we have dealt, the fact that the manager and the overwhelming majority of gospriyemka workers are experienced, highly skilled specialists at the same enterprise is the decisive factor in such an interaction. As we were told, at the Pamyati Revolyutsii 1905 Goda Plant gospriyemka consists mainly of specialists, who previously worked in other places. Therefore, we would like to get an answer to the following question: Does this aggravate the enterprise's difficulties, or contribute to their reduction?

First of all, however, we would like to clarify why, from the point of view of product quality, is the plant considered difficult?

Big Problems of a Difficult Enterprise

B. I. Shneyerson: The Pamyati Revolyutsii 1905 Goda Plant is an electrical machine building enterprise, at which about 1,250 people work, turning out products worth 25 to 26 million rubles annually.

At the plant there are two basic production facilities--machine and apparatus ones. Machine production ensures the manufacture of d.c. engines of five sizes (from the first through the fifth), whose power ranges from 3 to 50 kw. They are designed basically for crane equipment in metallurgical and ship building industries. Apparatus production ensures the output of control panels for tower cranes and city transport--tramway lines, trolley buses, and the subway.

Small-series production with a big products list is characteristic of the plant. This determines the basic difficulties in solving problems concerning an improvement in the quality of our products.

Moderator: What was the state of affairs with the quality of products at the plant before the introduction of gospriyemka?

S. S. Kochetov: Relatively satisfactory. Thus, according to 1986 data the proportion of products with the State Badge of Quality in the total production volume reached 51 percent. In the last 3 years there has not been a single claim against the plant's basic products and claims against consumer goods have not exceeded 3 percent of the output. However, losses due to rejects make up 0.1 percent, which is much lower than the average sectorial level.

However, all this well-being is only external and one has to pay a high price for it. Thus, testing stations of the technical control department return up to 20 percent of the machine production articles for further improvement. As a result, almost every fifth machine has to be dismantled, which, naturally, is fraught with big losses of time and money.

Boris Izrailevich is right: Basic difficulties in ensuring a stable qualitative manufacture of products are caused primarily by the fact that our

plant's production has a big products list. Engines alone are manufactured in 250 different type sizes and modifications. It is clear that this rules out the possibility of any in-depth specialization and, consequently, of significant production mechanization and automation. As is well known, such production can ensure neither a high efficiency, nor the proper quality of article manufacture.

All this has become especially obvious with the introduction of gospriyemka.

Moderator: Was the need to solve problems of production specialization, mechanization, and automation not obvious even before gospriyemka?

S. S. Kochetov: Of course, it was. However, the strict requirements of gospriyemka, which has sharply aggravated many problems that have been known for a long time but for some reasons or others have not been solved, has made the specialization, reconstruction, and retooling of production exceptionally urgent. Under the conditions of gospriyemka operation problems of developing the enterprise's design and technological services, strengthening the technical control service, and outfitting it with modern control and testing equipment have become very acute.

B. I. Shneyerson: Speaking of gospriyemka, it seems to me that it is necessary to especially stress that it has not only uncovered new and aggravated old problems concerning the development and improvement of production, but has also given hope that they will be solved very radically and quite rapidly. The point is that gospriyemka, representing such a powerful organization as the USSR State Committee for Standards, can ensure such a "presentation" of plant problems at the main administration and the ministry that they will have to be taken into consideration.

All the plant's basic problems, whose lack of solution holds back or even rules out the possibility for a radical rise in the technical level and quality of output, at least were very firmly raised by the gospriyemka manager at the conference held by the chief of the appropriate main administration of the Ministry of the Electrical Equipment Industry in the middle of last December and to which the secretary of the Krasnopresnenskiy Rayon Party Committee was invited.

Moderator: Apparently, proposals by gospriyemka on eliminating the bottlenecks uncovered by it in the design of articles and in the technology and organization of their production were discussed at that conference?

A. A. Vlasov: Yes, having operated at the plant for almost 2 and 1/2 months and having analyzed all its bottlenecks and the ways of eliminating them during that time, gospriyemka made specific substantiated proposals on creating at the enterprise the conditions necessary for an efficient solution of problems and for a rise in the technical level and quality of products. Since, as you say, the Pamyati Revolyutsii 1905 Goda Plant is a difficult enterprise, the discussion at the conference concerned not only the elimination of individual oversights and imperfections, but also the solution of big and complex problems concerning the further development of production and rise in the technical level and quality of products.

The set of these big problems also includes such problems as the specialization of production and increase in its series nature and the plant's reconstruction and technical retooling. Therefore, the role of the conference held should not be exaggerated, although its decision notes that, for example, during the first quarter the main administration should examine the problem of enterprise specialization. There is a need for purposeful persistent work, I would even say, for a fight for transforming the Pamyati Revolyutsii 1905 Goda Plant into a modern enterprise capable of ensuring an efficient production of high-quality products. Since gospriyemka and the enterprise management have one goal, there should also be joint work on attaining it.

New Service and Its Work Style

Moderator: Albert Aleksandrovich, please tell us about the basic features of the gospriyemka headed by you.

A. A. Vlasov: The new service was formed on the basis of the need, first of all, to ensure a reliable acceptance of all finished products of machine and apparatus production, as well as consumer goods. At the same time, both the plant's old technical base and the low production regularity, owing to which work is often organized both during the second shift and on Sundays, were taken into consideration. As a result, the numerical strength of gospriyemka reached 14 people. This is slightly more than the recommended 10 percent of the numerical strength of the technical control department, where, according to the list of staff members, approximately 90 people should work. Apparently, however, such an excess can be considered one of the consequences of the fact that the plant is difficult.

There are three groups in the structure of gospriyemka: machine production--three people; apparatus production--five; consumer goods--two. Two people not united into a group control the performance of all types of tests. Moreover, I, as gospriyemka manager, have a nonstaff deputy, who, in addition to performing these functions, is engaged in organizing receipt control.

Since the journal's editorial department is interested in how many "newcomers" there are in gospriyemka, I can say that there are 13. Thirteen gospriyemka workers also have higher education and one, secondary technical education. There are seven party members in the structure of gospriyemka.

Moderator: You said that, when determining the numerical strength of gospriyemka, you proceeded from the need to ensure a reliable acceptance of finished products. At the same time, was the need to exercise permanent control over the manufacture of products and patrol inspection of production taken into consideration?

A. A. Vlasov: When calculating the numerical strength of our service, we took into consideration only the need to carry out the acceptance of finished products. However, this does not at all mean that we have decided to ignore both permanent control over the manufacture of products at shops and sections and permanent inspection of production at all its stages. Quite the contrary: All this was considered our workers' official duty.

The point is that at our plant finished products are not presented to gospriyemka every 5 minutes. Therefore, gospriyemka workers have time to directly participate in the process of developing articles, which they will later accept.

I must especially stress that we do not separate ourselves from the plant and, therefore, we believe that we are participants in the process of manufacture and output of products. Only our participation lies in controlling the course of production and the quality of product manufacture at all its stages and in finding and organizing work on the elimination of bottlenecks, which determine the possibility for the appearance of defects.

Moderator: What do you have in mind when you talk about the participation of gospriyemka workers in the organization of work on eliminating bottlenecks?

A. A. Vlasov: We believe that gospriyemka as a whole and each of its workers separately must not only uncover, but also strive at all costs to eliminate the reasons for the appearance of defects and, if necessary, enlist appropriate services, subdivisions, and officials in the solution of arising problems. Therefore, gospriyemka workers more and more often become initiators and active participants in work aimed at improving the quality of product manufacture.

I must say that such an approach is also beginning to find an appropriate organizational form. I have in mind commissions on quality, which are being established at some, if one may say so, defect-dangerous sections. These commissions include designers, technologists, production workers, and gospriyemka representatives. Periodically or on signal from gospriyemka representatives these commissions inspect appropriate technological processes, uncover the reasons for the appearance of defects, and promptly work out and realize specific sets of measures aimed at eliminating these reasons. I, as the head of gospriyemka, manage the formation and activity of such commissions on quality. Experience shows that this activity gives a definite effect. Therefore, we believe that it is necessary not only to continue, but also to expand and develop this work significantly.

Moderator: In your opinion, how successful is the activity of gospriyemka?

A. A. Vlasov: It is still too early to answer this conclusively. We began working in October, accepting only 12 percent of the products produced by the plant. Then this volume increased in stages: in November, 50 percent, in December, 70 percent, and in January, 100 percent.

From October through February the delivery of products to gospriyemka on the first presentation increased from 30 to 90-95 percent. This indicator is often used when gospriyemka activity is evaluated. However, from my point of view, it characterizes to a greater extent this enterprise's work under conditions of gospriyemka operation. As I have already stated, we do not separate ourselves from the plant. Therefore, this indicator suits us fine. Judging from its rise, this enterprise's work under new conditions is well in hand despite a number of considerable difficulties, which must be overcome.

Difficulties of the Technical Control Department and Ways of Overcoming Them

Moderator: Since under the effect of gospriyemka restructuring the enterprise's production and economic activity, as a rule, begins with restructuring the work of the technical control department, I would also like to begin the talk about difficulties with those of the technical control service.

S. S. Kochetov: The work of the technical control service was by no means easy even before the introduction of gospriyemka. With an authorized strength of 91 people 64--only 30 percent of whom have special training--now work at the technical control department. Nevertheless, until recently we have performed our functions quite successfully. This is indicated by the fact that there have not been claims against the plant's basic products and losses due to rejects are below the average level in the sector.

However, with the beginning of gospriyemka activity the technical control department, in fact, has encountered a number of additional difficulties both technical and organizational. In this connection it is necessary to say, first of all, that under the new conditions stand tests of finished articles have become a bottleneck. For example, 30 percent more time is now spent on passing articles through a testing station than before and, therefore, it is necessary to organize two- or even three-shift work by testers.

Moderator: Apparently, this is due to the fact that under the effect of gospriyemka articles must be tested according to a bigger number of parameters and more carefully than before.

A. A. Kochetov: For these reasons the labor intensiveness of tests, in fact, has increased somewhat, but not so much as to transform the testing station into the plant's bottleneck. It is not a matter of increasing the labor intensiveness of operations performed by workers at the technical control department, but of prolonging the cycle of tests, because after us gospriyemka representatives test already tested articles on the same stands.

Moderator: Have the ways of eliminating this bottleneck been determined?

A. A. Vlasov: Of all the possible ways three basic directions in increasing a testing station's capacity have been selected. Equipment automation is the first and most radical, although the practical solution of this problem is not possible before 1988. The second direction, which is already being realized, is a changeover from continuous to spot acceptance. The third direction, for whose realization preparations are now being made, is a changeover from successive (after the technical control department) to parallel and joint (with the technical control department) acceptance of products.

Moderator: Is spot acceptance of small-series products produced by your plant legitimate?

A. A. Vlasov: The plant's basic products are produced according to specifications, which stipulate the need for acceptance and transfer tests of every article. An absolute fulfillment of this requirement by the technical control department is controlled by gospriyemka. With regard to the performance by gospriyemka of repeated tests of all articles accepted by the technical control service, this is impossible in a full volume under the conditions presently formed at the plant. Therefore, we were forced, together with the developers of these articles, that is, specialists at the Dinamo Production Association Institute (VNIPTI), to develop and in accordance with the established procedure to approve provisional program methods of spot tests of the plant's finished articles.

At the same time, under our pressure the plant concluded an economic contract with one of the institutes of the USSR State Committee for Standards on the development and introduction during the year of statistical control and test methods with due regard for the specific nature of our products and their production.

Moderator: To what extent does the replacement of continuous acceptance with spot acceptance increase the risk of accepting a batch of articles, which also includes poor-quality ones?

A. A. Vlasov: Any increase in the risk of passing defective products through the plant's gate is out of the question. Therefore, introducing spot acceptance, we have significantly intensified work on preventing a poor-quality manufacture of articles at all production stages, beginning with the earliest. We seek the same from the technical control department and the plant's all other services and subdivisions. At the same time, we proceed from the fact that, if by common efforts we manage to attain the necessary adjustment and stability of the technology of manufacturing all parts and units, as well as of assembling articles, during their spot acceptance the risk of passing poor-quality products will be virtually the same as during continuous acceptance.

The practical realization of the third direction in solving the problem of increasing a testing station's capacity--changeover from successive to parallel and joint (with the technical control department) acceptance of products--is legitimate under these conditions.

Moderator: Please explain, under what conditions do you consider it possible to change over to parallel and joint acceptance and what is the difference between them?

A. A. Vlasov: From my point of view, parallel and joint acceptance of products is possible only if there is full confidence in the stability of adjusted technology and in the fact that this technology ensures the necessary quantity of article manufacture. If, however, for some reasons there is a doubt as to the quality of product manufacture, it is necessary to immediately change over to successive acceptance, that is, to the acceptance of products accepted by the technical control department.

I would describe the difference between parallel and joint acceptance as follows: In both cases the technical control department carries out acceptance. However, in parallel acceptance the presence of a gospriyemka representative is sufficient, but in joint acceptance, he should directly participate in the acceptance process. In all probability, joint acceptance can be most effective when all types of tests of products are performed jointly and when control over a specific parameter is exercised under laboratory conditions.

Ye. N. Cheprakov: To the three directions in increasing a testing station's capacity described by Albert Aleksandrovich I would add another--increase in the regularity of arrival of articles for tests. A preliminary study of this matter has shown that, when an appropriate schedule for the preparation and transfer of articles for tests is established and met strictly, there will be no such big jams as there are now at a testing station.

If, however, by introducing proper order, we attain a significant increase in the regularity and coordination of the work done by all the plant's subdivisions, especially outfitting and assembly shops, it will be possible not only to bring closer the possibility of introducing parallel and joint acceptance, but also to radically improve the quality of control and tests.

S. S. Kochetov: Ensuring a regular arrival of articles at a testing station at least will make it possible right now to eliminate testers' work during the third shift. If, however, we talk about prospects, from the point of view of the technical control department, in an increase in the regularity and automation of production there are big, if not decisive, potentials for improving the efficiency and quality of the work done by technical control services.

Moderator: Please tell us how the big opportunities for improving the efficiency and quality of work done by the technical control department envisaged in the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for a Fundamental Improvement in Product Quality" are realized at the plant?

S. S. Kochetov: In order to realize the opportunities envisaged by the decree, a special order for the plant was issued. In accordance with it a great deal has already been done, including the system of material incentives for controllers has been improved (now their bonuses do not depend on the fulfillment of the output plan), the wages of some skilled workers have been raised, collective forms of labor organization are utilized widely, and so on.

With regard to the shortage of staff for the service and the insufficient skills of a certain number of controllers, this is a natural consequence of the fact that the possibility of increasing the wage fund established for the technical control department has been virtually ruled out. Here there is a situation, which is usually described as a closed circle.

The point is that, in order to enhance the prestige of the technical control service and to ensure the influx of skilled workers into it, it is necessary to pay them no less than skilled production workers are paid. The decree

permits this. However, with an unchangeable wage fund only two alternatives of the practical realization of this authorization are possible: First, sharply differentiating the wages of the same number of workers, that is, increasing the wages of skilled and well-paid workers and lowering them for all other workers respectively; second, reducing the number of workers and utilizing released funds to increase the wages of skilled and good workers.

We have been able to realize only the second alternative. Therefore, while undergoing considerable difficulties owing to the shortage of people, we cannot bring existing staffs up to full strength, because this is associated with a reduction in the earnings of those who now work at the technical control department, in particular testers.

We see the way out of this closed circle in realizing the directions in work that have already been discussed. Therefore, we are not only the advocates of, but also active participants in, all these very promising undertakings.

Allies of Designers and Technologists

Moderator: Without close cooperation with designers and technologists gospriyemka will hardly manage to attain a successful solution of its basic problem--to rule out the very possibility of manufacturing poor-quality products. Therefore, I would like to know how mutual relations of gospriyemka with these leading engineering services of the plant are formed during the solution of both problems concerning the enterprise's further development and individual problems connected with uncovering and eliminating bottlenecks in the design of articles and in the technology of manufacturing them?

V. N. Orlova: Good business-like relations are formed between the plant's designers and technologists and gospriyemka. Both the community of goals and good mutual understanding during the selection of ways of attaining them contribute to this. To the above-stated it should be added that in gospriyemka we have found not only a like-minded organization, but also a very strong ally in the fight for creating at the plant favorable conditions for an efficient and stably qualitative manufacture of products meeting the world level. Expanding the rights and possibilities of the enterprise's design and technological services is one of such conditions.

The point is that at the plant these services are not only small in number and weak, but are also deprived of the necessary independence even in the solution of problems connected with an insignificant improvement in design and technology, because the Dinamo Production Association (VNIPTI) is the developer (holder) of the articles produced by the plant. Unfortunately, the Dinamo Production Association does not show proper interest in speeding up the renewability and rise in the technical level of articles produced by the plant and, moreover, in raising the level of their defect-free manufacture. Usually, its workers try to dismiss the solution of arising problems, whose realization requires a significant study of the issues raised.

Under the conditions of gospriyemka operation such a situation has become absolutely unacceptable, because it rules out the possibility of prompt interference in design and technology for the purpose of eliminating

bottlenecks. In particular, this affects the success rate of the work done by commissions on quality established on the initiative of gospriyemka, which are called upon to eliminate the design and technological causes of defects in the manufacture of articles.

It must be stated that for a long time the plant has persistently posed before the main administration and the ministry the problem of expanding the rights and possibilities of design and technological services. Now gospriyemka actively supports this requirement.

It should be added that at the mentioned conference the manager of gospriyemka showed that representatives of the developing organization, to put it mildly, did not appear regularly at the plant and ignored problems, which they were obliged to solve, carrying out the author's obligatory supervision. A plan for author's supervision and a set of measures for the solution by developers of problems, which have not been solved by them for a long time, have now been worked out and approved.

M. G. Lapidus: To what the chief designer has said I can add only that with the introduction of gospriyemka not another controlling body has appeared at the plant, but a highly effective service, whose workers have actively, I would even say, energetically enlisted virtually all services and subdivisions in work on improving the quality of product manufacture. This does not mean that before gospriyemka the plant did not engage in an improvement in the quality of product manufacture. However, under its effect a revival has begun in this work. It has become more purposeful and overall, more profound and stepped-up.

The plant's technological service has also stirred up its activity significantly. At the same time, special attention is paid to refining and perfecting the technology of technical control and the mechanization and automation of control operations. Unfortunately, owing to its small size, the chief technologist's department cannot solve these problems on its own. Therefore, we cooperate with the Kharkov All-Union Scientific Research and Technological Institute of Electrical Machine Building Technology and the Leningrad All-Union Planning and Design Institute of Electrical Engineering Production Technology. Work is carried out according to the plan approved by the deputy minister.

Technologists work hand in hand with gospriyemka on adjusting and stabilizing technology at so-called defect-dangerous sections. Our service also takes an active part in the work of commissions on quality formed by gospriyemka.

At the same time, it should be especially noted that all this work, which is carried out quite well now, represents only the introduction of proper order at the plant, which is now extremely necessary, but insufficient to ensure a high and stable quality of manufacture of products corresponding to the world level. From the technologist's point of view, this requires a fundamental solution of the problem of specialization and increase in the series nature of production. We have already discussed the fact that gospriyemka contributes to the realization of such an approach to ensuring plant development.

Strict Requirements Without Conflicts

Moderator: Gospriyemka is supposed not so much to help the enterprise collective to overcome arising difficulties as to strictly and without a compromise make it responsible for violating the established requirements on product quality. So far our "round table" discussion has been only about the plant's difficulties and the active participation of gospriyemka in overcoming them, not about certain manifestations of its principled nature and firmness. Is this not an evidence of the lack of demands by gospriyemka and of its striving for a lack of conflicts?

B. I. Shneyerson: Actually, there were no conflicts between gospriyemka and enterprise services. However, this does not mean at all that there were no conflict situations and that, at the same time, gospriyemka did not place strict demands, nor was it sufficiently persistent, striving both to eliminate the reasons for the detected shortcomings and to uncover and punish those guilty of them. The point is that gospriyemka workers and all of us had enough sense, tact, self-control, and, above all, understanding of the objective need to improve the work and fairness of the demands made. Therefore, none of the numerous conflict situations turned into a conflict.

Moderator: What, basically, gives rise to conflict situations?

A. A. Vlasov: First of all, insufficient performance discipline. For some reason some managers of services and subdivisions considered--and some still do--it possible to ignore or not to rush with the fulfillment of appropriate gospriyemka orders and directives. We do the necessary work with such managers, utilizing both our capabilities and funds and enlisting the party committee and other public organizations in this. As a result, we, as a rule, attain the goals set, without getting involved in noisy and lengthy conflicts.

I must say that we pay special attention so that all our actions are correctly understood by direct executors and are supported by them. Therefore, in our practical work we are guided by the following three rules:

Not only to demand a high-quality manufacture of products at every work place, but also to strive for the creation at these work places of all the conditions necessary for this.

To uncover and punish people guilty of a poor-quality manufacture of products not only among executors, but also managers, whatever rank they have.

To widely inform workers of gospriyemka plans and actions.

Gospriyemka has obtained an order of the plant director, which instructs the chief engineer to develop and realize the plan for further equipping work places at a number of complex sections. We control the fulfillment of this plan and inform workers of what is being done and what is being prepared.

Not long ago, owing to our prohibition of the acceptance of poor-quality accessories, the section for the manufacture of coffee mills was shut down. A

workers' meeting was held immediately at it and the gospriyemka manager, the deputy director for quality, and the secretary of the party committee spoke at it. All the officials guilty of the section's shutdown were mentioned by name at that meeting. Then with the help of the rayon party committee and the Administration for the Quality of Products of the Ministry of the Electrical Equipment Industry we brought this matter to its logical conclusion, as a result of which chiefs of two appropriate main administrations received party penalties. The decisions adopted were reported to workers. The situation at this section is now being rectified, although with a great deal of difficulty.

The plant's managers, through whose fault the articles assembled by workers were not promptly presented to gospriyemka and the plan fulfillment was threatened, were punished at gospriyemka insistence last month. Workers were also informed of this.

Moderator: Has the activity of gospriyemka led to a disruption in the fulfillment of the production program?

B. I. Shneyerson: Owing to gospriyemka actions, the plan fulfillment has not yet been disrupted.

Moderator: In the conclusion of our talk we would nevertheless like to get an answer to the question raised at the very beginning: How does the fact that specialists, who have come from other enterprises, constitute the majority in gospriyemka affect the interaction of plant services with it?

B. I. Shneyerson: During the 3 or 4 months spent on stepped-up purposeful work, gospriyemka has ceased to be perceived at the plant as something foreign and its workers have ceased to be strangers. I am convinced that this fact will contribute to an increase in the efficiency of joint work. Nevertheless, a great deal of effort, mutual tact, and business-like adherence to principles will still be required on the part of gospriyemka and plant workers during an overall solution of problems of improving the quality of product manufacture and of unconditionally fulfilling the state plan and socialist obligations.

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NEW PLANNING CONSIDERATIONS INVOLVED IN ECONOMIC REFORM

Moscow EKONOMICHESKIYE NAUKI in Russian No 4, Apr 87 pp 38-43

[Article by N. Dyakova, candidate of economic sciences: "Ways of Improving Developments of the Five-Year Plan of Enterprises (Production Associations) Under New Management Conditions"]

[Text] Presently performed work on transferring the industry to new management conditions presupposes, as the most important factor, an increase in the role of the five-year plan and its transformation into the main form of planning and organizing the economic activity of production associations (enterprises) (1). Essentially, this problem has confronted the theory and practice of planning for many years. An increase in the role of the five-year plan was also an element of the system of measures for improving the economic mechanism envisaged for the 11th Five-Year Plan. For this, in particular, it was envisaged working out, as part of the five-year plan, for every year balances of material and labor resources and of production capacities, the financial balance, and the balance of the population's monetary income and expenditure; providing for the formation of financial and material reserves for production; approving long-term economic norms, including norms for the formation of the wage fund and economic incentive funds; retaining for the five-year plan stable wholesale prices in industry, wage rates in freight transport, estimated prices in construction, and so forth. An evaluation of the fulfillment of the five-year plan was begun to be made in a running total.

As is well known, however, these measures were not realized in a full volume during the past five-year plan. As noted at the session of the USSR Supreme Soviet in June 1986, the national economy developed on the basis of annual plans and, in practice, there was a deviation from the indicators, rates, and proportions of the five-year plan. There were several reasons for this. As before, disproportions were allowed in production and material and technical supply plans. The distribution of capital investments according to the principle "earrings for each sister" led to their dissipation and a slowdown in the replacement of fixed capital. In turn an untimely delivery of projects led to underdeliveries of products and disproportions in the plan in the course of its fulfillment. Nor was the stability of long-term economic norms maintained owing to shortcomings in the method of their formation and changes in annual plan indicators. As was stressed in the political report of the CPSU Central Committee to the 27th party congress, the inertial force of

established planning methods--determination of planned assignments based on the attained level, their excessive detailing, and expansion of the products list approved in a centralized manner--also had a negative effect. The bigger the detailing, the more complicated it is to attain a balance and to ensure stability. For these and other reasons annual plans carried the main load.

Therefore, an increase in the importance of the five-year plan forms the basis for the new management methods now introduced into our economy. In accordance with them the annual plans of an association (enterprise) are formed on the basis of consolidated products list assignments, economic norms assigned as part of control figures for the five-year plan, and economic contracts between suppliers and consumers. The report by N. V. Talyzin at the sixth session of the USSR Supreme Soviet of the 11th convocation, in particular, notes the following: "A 100-percent fulfillment of contractual obligations will be the basic indicator in industry as of 1987. The fulfillment of contracts also becomes one of the major evaluating indicators in capital construction and in other national economic sectors... The approach to planning based on "what has been attained" has also been overcome. The rates of growth for 1987 have been established on the basis of the assignments of the five-year plan and the 1986 plan, not on the basis of the expected fulfillment, as was the case previously... The new approach actually transforms the five-year plan into the basic form of planning, ensures its stability, and thereby creates conditions for obtaining the maximum effect from the application of long-term economic norms" (2).

The problem of increasing the role of the five-year plan is multifaceted. This article examines some considerations concerning the directions in solving it as applied to the process of developing the five-year plan. As is well known, production planning should begin from the substantiation of the need for given products, on the basis of which the products list (that is, the plan in physical terms) is determined and then the plan's value indicators are formed. However, the determination of the list of products on the basis of studying the need for them is one of the bottlenecks in the development of the five-year plan. Enterprises do not have the necessary information on this matter and assume that the ministry should assign the products list to them, that is, specific types of products in physical, not value, terms, as was envisaged when the draft of the State Plan for the Economic and Social Development of the USSR for 1986-1990 was prepared.

For example, control figures for the 12th Five-Year Plan (by years) for the rates of growth of commodity and standard net output and for the volume of output of computer hardware according to value with the singling out of peripheral equipment, instruments, automation equipment, and spare parts, as well as production pertaining to group B of industry, were conveyed to associations (enterprises) producing computer hardware. On the basis of these data associations (enterprises) were supposed to develop the products list plan.

Methodological directives concerning the procedure and periods of development of five-year and annual plans of a number of ministries stipulate that before the beginning of the preparation by associations (enterprises) of five-year and annual draft plans the ministry works out and in coordination with the

USSR Gosplan approves the list (assortment) of products, for which the volume of production in physical terms and limits and allocations for material and technical resources are established for associations (enterprises) in accordance with approved assignments of state plans. Methodological directives also stipulate that the ministry and enterprises, before the development of five-year draft plans, together with material-technical supply and local planning bodies determine the need of the national economy for the products produced by them in terms of the necessary list and quality.

However, these provisions "work" only with respect to the annual plan and do not find application in the formation of the five-year plan.

Owing to the importance of this matter, we will dwell on it at a somewhat greater length. An analysis and determination of the prospects for the development of needs for specific products are initial for planning at any level (national economy, sector, enterprise, and association). This means that the latter should be studied carefully. The decisions of the 27th CPSU Congress and decrees of the CPSU Central Committee and the USSR Council of Ministers "On Extensive Popularization of New Management Methods and Intensification of Their Effect on the Acceleration of Scientific and Technical Progress" (dated 12 July 1985) stress the need for a more active effect of consumers on the formation of producers' plans. It is not a matter of a single measure, but of developing a system of feedback between consumption and production. Only on the basis of a study of needs met by means of given products and consumers' requirements for their quality and quantity is it possible to determine the entire set of measures contributing to a fuller and more efficient satisfaction of needs for the technical development of production, improvement in the planning system, a better utilization of labor resources, and so forth.

Who should be responsible for work on studying and determining the need for specific types of products? As envisaged by the decree of the CPSU Central Committee and the USSR Council of Ministers dated 12 July 1979 "On Improving Planning and Intensifying the Effect of the Economic Mechanism on Raising Production Efficiency and Work Quality," "responsibility for meeting the needs of the national economy and the population for products of the necessary assortment and quality rests with the head ministry in the production of given products. The detailed list (assortment) of products, as well as the dates for their delivery, are determined by supplier production associations (enterprises) and consumer production associations (enterprises) jointly with main supply and sales administrations under USSR Gosplan, or sales organizations of ministries and departments (for products not sold through the state material and technical supply system)" (3). In practice, however, these provisions are by no means realized always.

The problem of studying and substantiating needs is of special importance for enterprises of base machine building sectors, which determine the measures for developing scientific and technical progress in the national economy (machine tool building, electrical engineering, electronics, instrument making, and so forth). They cannot on their own reliably determine the prospects for the needs for the products produced by them. This is largely due to the high degree of their renewability. For example, at the Kiev Electronic, Computer,

and Control Machine Plant the products list has been almost fully renewed during the last 3 years. Accessories received not only from the enterprises of its ministry and other USSR ministries, but also from abroad, predominate (more than 80 percent) in the structure of expenditures on their production. However, the enterprise does not have long-term data on imported deliveries of accessories for computer hardware. Owing to this, material and technical provision for the five-year plan, essentially, is not planned and long economic relations are absent.

For the sake of fairness it should be noted that a method of determining the national economic need for a sector's output has been developed in many sectors. Unfortunately, however, many of its correct provisions have not found the way to associations (enterprises), in particular to the instrument making sector. In accordance with this method calculations for substantiating the national economic need for this sector's output are performed by subsectorial scientific research institutes responsible for certain groups in accordance with an association's (enterprise's) plans for the production of listed products. At the same time, it is presupposed that institutes should interact with superior bodies (Ministry of Instrument Making, Automation Equipment, and Control Systems and USSR Gosplan) and material and technical supply bodies. It is envisaged that institutes coordinate the need for the output of their subsector with USSR Gosplan and USSR Gosstsnab, approve the results of calculations at all-Union production associations, and transfer them to the Central Scientific Research Institute of Scientific, Technical, and Economic Information in Instrument Making for generalization and preparation of consolidated calculations of the need in the sector, which are then transmitted to the All-Union Scientific Research Institute of Sectorial Automated Control Systems (VNIPI OASU) and the Main Planning and Economic Administration (GPEU) of the Ministry of Instrument Making, Automation Equipment, and Control Systems.

It would seem that a harmonious chain has been formed, but, in reality, it is deprived of some links. Thus, calculations for the need should be performed in accordance with an enterprise's plans for the production of listed products formed on the basis of substantiated needs. Consequently, there is a kind of vicious circle. It also remains unclear how consolidated calculations of national economic needs are subsequently handled at VNIPI OASU and GPEU of the ministry. Furthermore, the forms of presentation of data on the need (including for the five-year plan) proposed in the method contain information only on the types of basic groups of products and the production volume in value terms (million rubles). This means that, as before, it is not known what specific instruments, computer hardware, and other products are needed by consumers.

The question of substantiating the need is especially important for enterprises producing computer hardware in connection with the problem of mastering new output. Hence the need for a close coordination of plans for production and new equipment envisaged by the above-mentioned decree of the CPSU Central Committee and the USSR Council of Ministers dated 12 July 1985. It seems that these plans should be largely coordinated through overall programs for scientific and technical progress. The latter should be prepared jointly with producers and consumers and encompass all the stages in the

development of new types of products: from scientific research to application in the national economy. Programs for key types of products approved by the State Committee for Science and Technology and USSR Gosplan should become the basic document preceding the development of the five-year plan and their assignments approved in the plan for new equipment will intensify the orientation toward consumers' interests and a fuller satisfaction of needs. At the same time, it is important to ensure in practice, as envisaged by the decree dated 12 July 1985, the inclusion in the plan's assignments for the production of products in physical terms of indicators for the output of new equipment, which should serve as the basis for providing such output with necessary resources (material, labor, and financial). Simultaneously, the level of fulfillment of the plan for new equipment should be more fully taken into consideration when evaluating the activity of associations (enterprises), including the formation of economic incentive funds, amounts of bonuses, and so forth.

At the same time, one cannot unconditionally agree with the opinion that consumer enterprises themselves should determine the need for specific types of equipment, primarily new one (4). This formulation of the problem, undoubtedly, would not have evoked doubts with an organizational restructuring of industrial sectors, where large production, especially scientific production, associations would have occupied the basic place in the structure of management. Practice has demonstrated that the scientific production association is the most efficient form of a link between science and production. Thus, practical experience in the electronic industry, where 80 percent of the scientific research institutes and design offices form part of scientific production associations, has shown that the "research-production" cycle is lowered by a factor of 1.5, the rates of labor productivity growth are 3 to 4 percent higher than at production associations, the level of expenditures per ruble of commodity output is much lower, and the output of high-quality, new articles has doubled (5).

In our opinion, head scientific research institutes (organizations) responsible for the development of some products (computer hardware, control instruments, time instruments, and so forth) should determine the need for groups of products for the five-year plan under conditions of a two-link system for managing the sector. These scientific research institutes should become the connecting link between production associations, scientific production associations, and the ministry apparatus and take the most direct part in the development of such major planning documents as the overall program for scientific and technical progress for 20 years, basic directions in the economic and social development of this subsector for 15 years, and five-year and annual plans. The need for products of this specialization should also be determined at all the stages of development of such a plan system. Hence it follows that the assignments of basic directions in economic and social development, as well as long-term contracts, in which the need is specified with due regard for the list and quality of products required by consumers, should serve as the basis for substantiating the need in a consolidated form for the five-year plan.

We have approached one of the key methodological questions in plan development: What should be formed earlier--the economic contract or the

five-year production plan (production program)? As is well known, superior planning bodies now send down ("one stage lower") (Gosplan to ministry; ministry to enterprises) at first planning assignments for output, which later in a significant part are formulated as an economic contract between producers and consumers. Thus, contracts (if concluded), essentially, perform the role of a tool in specifying the plan only at the stage of its fulfillment. Nor have they become the basis for the formation of the production program under new management conditions.

It should be stressed that such a procedure is one of the reasons for the imbalance of production and material and technical supply plans. The point is that Gosplan plans production and distribution according to a consolidated national economic products list and Gossnab increases the latter significantly. Receiving such consolidated indicators, an enterprise should detail them in terms of specific items when changing over to economic contracts. We would like to note that in the last 15 years the number of individual types of products has virtually doubled, now totaling about 24 million. In practice, it often turns out that directive assignments received from a superior organization do not correspond to consumers' needs. This, of course, is reflected in the technical and economic indicators of an enterprise's production and economic activity, which has numerous examples. Thus, after the final formation of the portfolio of orders for 1984 at the Andizhan Elektrovigatel Plant imeni 50-Letiya SSSR it was revealed that consumers needed 16 percent less electric motors of the TO-3 series and 6 percent more electric motors of the 4AM100 series than envisaged in the production plan. Such a situation exists at many other enterprises and not only of the electrical equipment industry (6).

The application of so-called weighted mean norms also causes an imbalance of plans. These norms are examined by the ministry and coordinated with USSR Gosplan, while Gossnab, which remains on the sidelines, determines the wide products list, according to which these norms are planned. The enterprise, which is forced through numerous agreements with these organizations to accomplish the task of balancing plans, pays for such planning.

Under present conditions, essentially, there is no system of five-year material and technical supply plans. Nor do enterprises with stable production transferred to direct long economic relations have such plans, not to mention enterprises with a high degree of output renewability. In practice, only annual material and technical supply plans, whose development is preceded by the attachment of consumers to suppliers, are in effect to this day. Such work starts no less than 4 months before the beginning of the planned year, while schedule-orders for products are issued a long time before production and distribution plans are received. This hampers a substantiated provision of enterprises with material resources, including accessories. As a result, the production plan is worked out separately from the material and technical supply plan, which leads to a plan imbalance and to a coordination of the production program and its material and technical provision by means of numerous corrections during the year.

In practice, an attempt is made to resolve these contradictions through the issue of orders at the level of past years' deliveries (advanced schedule of

allocations), or on the basis of draft plans. However, these measures are not justified, because, as shown above, draft plans are amended repeatedly, which leads to changes in previously issued orders and, consequently, to a plan instability.

Various measures for the elimination of this shortcoming are offered. One of them is to bring the periods of development of the production program and of the distribution of products closer to the beginning of issue of schedule-orders (7). According to such an idea, in May of the preceding year ministries should assign draft production plans to their enterprises (production associations) and, at the same time, announce the allocations of material and technical resources. Then enterprises will have enough time to substantiate the assortment, to formulate schedule-orders for products, and to conclude contracts.

However, it seems to us that, first of all, it is necessary to solve the problem of mutually coordinating production plans with plans for the distribution of products. Increasing the role of long economic relations for a 5-year period and including contracts in the process of development of five-year plans for production in physical terms are the ways to this.

Presently formulated plans for attaching consumers to suppliers for 5 years do not have the necessary legal force, because they are not provided with allocations for this period. Therefore, an annual issue of schedule-orders exists, which does not enable enterprises (production associations) to conclude long-term contracts and to independently solve delivery problems.

Summing up, we would like to note the following basic factors: An analysis of the process of forming the five-year plan of enterprises producing computer hardware showed that the procedure of assigning control figures hardly underwent any changes. In this case the substantiation of the products list plan is one of the unsolved problems. Its solution requires taking into consideration consumers' orders on the basis of utilization of long direct economic relations, which should become an effective tool of forming the production plan, not its specification at the fulfillment stage as at present.

Economic contracts concluded for the five-year period, along with long-term economic norms, should become the basis for forming the production program of enterprises and its specific products list. Under these conditions there is a need for the most rapid transition to wholesale trade in means of production, whose importance and urgency was established more than 20 years ago. A real activation of this work is one of the main prerequisites for improving the economic mechanism.

For the purpose of strengthening the responsibility of industrial ministries for meeting the need for products produced by them, it is advisable to establish in their structure services for the study of this need. Such proposals were expressed in the literature and, in our opinion, deserve support (8).

The practical realization of these measures will contribute to the accomplishment of the major tasks set by the 27th CPSU Congress for

ministries, to a better determination of the strategy of scientific and technical progress in sectors, to a rise in the general level of economic work, and, ultimately, to a full satisfaction of society's needs for appropriate products.

FOOTNOTES

1. See: "Materialy XXVII s'yezda Kommunisticheskoy partii Sovetskogo Soyuz" [Materials of the 27th Congress of the Communist Party of the Soviet Union], Moscow, 1986, pp 330-331.
2. N. V. Talyzin, "O Gosudarstvennom plane ekonomicheskogo i sotsialnogo razvitiya SSSR na 1987 god i o khode vypolneniya plana v 1986 godu" [On the State Plan for the Economic and Social Development of the USSR for 1987 and the Course of Plan Fulfillment in 1986], Moscow, 1986, pp 6, 7.
3. "Sovershenstvovaniye khozyaystvennogo mekhanizma. Sb. dokumentov" [Improvement in the Economic Mechanism. Collection of Documents], Moscow, 1980, p 14.
4. See: "Improvement in the Planning of Science and Technology" PLANOVOYE KHOZYAYSTVO, 1985, No 2, p 24.
5. See: PRAVDA, 7 July 1985, p 2.
6. See: A. Pan, "Plan Quality and the Economic Contract" PLANOVOYE KHOZYAYSTVO, No 1, 1986, p 76.
7. See: S. Anisimov, "Improvement in the Planning and Organization of Deliveries" PLANOVOYE KHOZYAYSTVO, No 3, 1985, p 9.
8. See: PLANOVOYE KHOZYAYSTVO, No 1, 1986, p 78.

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AGRICULTURAL, INDUSTRIAL PRICING RELATIONS EXAMINED

Moscow VOPROSY EKONOMIKI in Russian No 5, Apr 87 pp 101-110

[Article by Aleksey Grigorevich Zeldner, doctor of economic sciences, professor, leading scientific associate, Economics Institute, USSR Academy of Sciences: "Price Relations and Exchange Between Agriculture and Industry"]

[Text] Prices have a substantially increased role during the conversion of enterprises and associations in various sectors of the national economy to self-financing. There is a contemporary discussion of price formation problems in the journal VOPROSY EKONOMIKI. The articles by N. Petrakov and A. Deryabina pose a number of questions on improvements in price formation methodology and the more full inclusion of logical patterns in the formation of ONZT in planning prices.¹

The intensified effectiveness of a price system depends not only upon price formation methodology, but also upon the more efficient use of all economic tools, including finance, credit and taxes. The relative accessibility of budget and credit resources does not sufficiently stimulate cost reductions. It is necessary to strengthen the responsibility of financial organs for the rational use of resources, thereby increasing the role of prices. The efficiency of prices is to a great extent determined by the possibility for materializing enterprises' monetary accumulation into the required amount and assortment of means of production, and observing the principle of equivalence in exchange.

It was noted at the January (1987) CPSU Central Committee Plenum, "prejudice" about the role of commodity-monetary relations and the effects of the law of value, and often their direct contrast to socialism as something alien have lead to voluntaristic approaches to economics, to underestimating cost accounting, to "leveling", in paying labor and have generated a subjective basis to price formation..." Subjectivism in price formation led to disturbances in price balance in exchange between agriculture and industry.

In recent years there has been a tendency towards increased agricultural production costs. These cost rises, together with other factors (increased outlays for labor, seeds, feeds produced at farms, slower increases in yields and productivity) have caused by steady increases in prices for industrial products delivered to agriculture.

This has revealed a sectorial approach in setting wholesale prices for industrial products and a striving by industry to compensate for any costs.

One of the most important conditions for equal exchange between sectors is the conversion of price formation to a unified methodological basis. What is actually happening? In planning wholesale prices for means of production profitability normatives are proportional to productive capital and are differentiated for various sectors. Since 1962, in approving wholesale prices for products of the petroleum, gas, petrochemical and chemical industry profitability normatives have been differentiated relative to productive capital; for construction materials, products of the coal and forest industries -- relative to productive capital and full production costs; for machinery building products -- relative to full production costs minus material outlays; for light and food industry products -- to productive capital, full production costs and production costs minus direct material inputs.²

Profitability normatives for basic agricultural products are computed as the relationship of normative profit to average zonal normative costs or normative average annual cost of agricultural means of production and normed circulating capital involved in the production of a given product.³

If, when setting wholesale prices for industrial products, profitability normatives are calculated mainly at the relation of profit to productive capital and for agricultural products as the relation of normative profit to average zonal costs. Consequently, there is not a unified approach to determining price levels. This leads to violations of the principle of equivalence in exchange, as, "according to the law of value equivalents are exchanged, a given quantity of labor is exchanged for an equal quantity."⁴ Exchange can be considered equivalent only if the inputs of the enterprises involved are socially necessary. It should be taken into account that under direct social production equivalence is assured not in each individual case but on the average, for prices as a monetary expression of value presume exchange based upon average labor costs. According to K. Marx, "exchange does not regulate the magnitude of a commodity's value, on the contrary, the magnitude of a commodity's value regulates its exchange relations."⁵

As is known, V. I. Lenin thought that a socialist could develop only if there was proper exchange in products of labor between the cities and the countryside. This he considered the economic essence and basis for socialism.⁶ Proper product exchange means economically profitable and, to a determined extent, equal.

Observing the principle of equal exchange between industry and agriculture should not be understood in a linear manner. All sectors in the national economy should participate in solving social and other problems. In order to obtain the resources necessary for this the state plans prices which deviate from value. Therefore, in solving the problem of equivalence, it is necessary to keep in mind that, if other conditions remain unchanged, price levels for agricultural and industrial products should assure that all normally operating enterprises are compensated for production costs and obtain profits sufficient for production on an expanded basis. The customer must be compensated

for differences in prices (in particular for industrial products used in agriculture). If not the increased production costs will be reflected in the size of profits and in enterprise self-financing. Exchange between sectors in agriculture and industry can be considered equal if it observes parity between customer and producer of means of production and the obligatory condition about which K. Marx wrote: "If one looks on machines exclusively as means of reducing the cost of the product, then the limits to their use are determined by the labor costs of their production being less than the labor replaced by their use."⁷ This approach to the customer makes it possible to increase efficiency and it becomes profitable for the producer to make various means of production.

In the conversion to a system of machinery it is important to estimate the real effect obtained in production where it is used. In obtaining means of production at wholesale or transfer prices, the customer pays for the planned effect of these implements of labor. The real effect from the implements acquired appears in the production process. It can be the same as, higher or even lower than the designed (intermediate) effect. Most often, the effect is lower, as the productivity of equipment, for example a tractor, is determined not for series produced, but for experimental models. In the final account the effect should be manifested in reductions in production costs. If costs do not decline, then together with growth in the capital-labor ratio there are declines in the indicator for public production efficiency. The growth in material inputs (especially for industrial products) makes the transition to self-financing even more difficult.

Changes in purchase prices after the May (1982) CPSU Central Committee Plenum were among the greatest in recent five-year plans. Sixteen billion rubles annually were allocated for increased purchase prices and markups. Also, when purchase prices were reexamined in January 1983 they also included those budget allocations which were released due to the abolition of subsidies for gasoline, spare parts, construction and other materials after the January 1982 increase in wholesale prices totalling 5 billion rubles. This substantially improved the profitability of agricultural production at kolkhozes and sovkhoses. In a short period the general index for the increase in purchase prices was considerably higher than the index for increases in wholesale prices for means of production delivered to agriculture. However, when one compares 1984, in which there were no sharp changes in prices, the general index for increases in wholesale prices for industrial products, wages and services was 104 over 1983, and the purchase price index during this same period was 102 percent.⁹ This tendency has an unfavorable influence upon the growth in agricultural production costs, a 5-7 percent decline in which was foreseen by the Basic Directions for the Economic Development of the USSR During 1986-1990 and up until 2000.

We will examine in more detail the changes in material inputs during the 11th Five-Year Plan. Compared to the 10th Five-Year Plan the average annual growth rates for material inputs during the 11th Five-Year Plan were quite high. Thus, the average annual growth rate for material inputs in crop production on the country's kolkhozes during the 11th Five-Year Plan was 3.9 percent, in the 10th -- 4.7 percent; on sovkhoses the figures were 6.5 and 5.5 percent; in animal production on kolkhozes -- 4.8 and 5.8 percent; on sovkhoses 6.1 and

5.8 percent. It should be kept in mind that reductions in growth rates do not necessarily mean declines in total inputs.

Steady growth in material inputs are caused both by growth in inputs for agricultural production and by increased costs of industrial products: mineral fertilizers, spare parts and feeds produced by industry. In 1985 they accounted for 21 percent of inputs to sovkhozes and 13.7 percent of those to kolkhozes. There is steady growth in labor, depreciation and insurance costs.

In 1985 material inputs were 58.2 percent of the kolkhoz input structure for agricultural and industrial outputs and for sovkhozes the figure was 69.2 percent, at kolkhozes 21.4 percent of these were industrial inputs and at sovkhozes -- 29.3 percent. Increases in the use of industrial products are an indicator of intensive development for sectors working in the APK. This is a progressive tendency if it does not lead to increased total inputs per unit of output. In general, from 1981 to 1985 material inputs per ruble of gross output (in 1973 prices) increased by 5.2 percent at kolkhozes and 8.6 percent at sovkhozes. We examine their changes per unit of gross output (see table).

Inputs per Rubles of Gross Output on Sovkhozes (Rubles)

	1981			1985		
	Total	[1.]	[2.]	Total	[1.]	[2.]
Material inputs into Agricultural output:	0.30	0.25	0.33	0.34	0.28	0.38
Including:						
Seed	0.08	0.08	--	0.09	0.09	--
Feed	0.19	--	0.19	0.22	--	0.22
Industrial inputs	0.40	0.32	0.45	0.43	0.33	0.48
Including:						
Feed	0.21	--	0.21	0.23	--	0.23
Mineral fertilizers	0.09	0.09	--	0.11	0.11	--
Fuel and lubricants	0.04	0.08	0.02	0.04	0.07	0.02
Spare parts and repair materials	0.03	0.07	0.01	0.04	0.07	0.02
Payments for services	0.05	0.10	0.02	0.06	0.11	0.03
Depreciation	0.16	0.23	0.12	0.17	0.25	0.13
Insurance payments	0.04	0.10	0.01	0.05	0.11	0.01

Key: 1. Crop production 2. Animal production

Supply organizations use allocations provided by USSR Gosagroprom to compensate kolkhozes and sovkhozes for the difference between industry wholesale prices and the transfer prices for agricultural products. Spare parts are sold at wholesale prices in effect for industry. As is known, after 1982 purchase prices were raised to cover the total price rise for spare parts. This total price rise was calculated from the volume and assortment of

spare parts used in a specific year. The volume and assortment of spare parts has changed considerably since then. In addition, an analysis of price lists for tractor parts during 1983-1985 shows that wholesale prices are continuing to rise. In 1984 an air cleaner for a D-108 engine cost 5.1 rubles and in 1985 -- 6.0 rubles. Its weight did not change, but its normative net product increased from 2.65 to 2.8 rubles. A similar picture is observed for pistons to the SMD [not further identified] engine. Although its main material input was of the same weight and grade, a piston's wholesale price increased from 4.7 rubles in 1983 to 5.6 rubles in 1985 (NChP [Net normative product] increased from 1 to 1.15 rubles.

Prices for spare parts increase through changes in the grade of materials used in their manufacture. In 1984 pistons for the D-108 engine cost 8 rubles (NChP -- 2.5 rubles, weight 4.4 kg). In 1985, due to changes in the material used, a piston's price increased to 19.5 rubles (NChP -- 6.25 rubles, weight 4.15 kg). All this caused the cost of spare parts and repair materials per 1 ruble of gross output at kolkhozes and sovkhoses to increase during the latter years of the five-year plan.¹⁰

In some years feed costs accounted for more than 60 percent of material inputs for animal production at sovkhoses (for example, 69.7 percent in 1985). Purchased feeds accounted for almost 50 percent of the feed costs. From 1981 to 1985 total sovkhos purchases of feeds, including mixed feeds, increased by 11.2 percent. During this period the cost per feed unit increased by 5.8 percent, including a 5.8 percent increase for mixed feeds. Keeping in mind that feeds account for a large share of animal product costs, it is not difficult to see one of the factors in production cost increases.¹¹

In connection with the increase in the capital labor ratio and total equipment available to labor, total depreciation costs at kolkhozes and sovkhoses are growing. This process is indirect evidence of positive changes in agricultural enterprises' material-technical base. However, increases in the amount of equipment not followed by more rapid growth in labor productivity and leading to increased depreciation per unit of agricultural output permit one to conclude that prices for this output are continuing to rise. There are also increases in the share of more expensive equipment in the machine and tractor fleet at kolkhozes and sovkhoses. Thus, in recent years there have been increases in deliveries of KSK-100 self-propelled combines to agriculture and reductions in deliveries of KS-1.8 towed combines, the transfer price of which is considerably lower. There is a similar picture for tractors. All this increases depreciation's share of production costs. For example, in 1985 depreciation accounted for 10.8 percent of crop production costs at sovkhoses. From 1981 to 1985 depreciation per ruble of gross output in plant production increased from 23 to 25 kopecks (8.7 percent) and in animal production from 12-13 kopecks (8.3 percent). Increased transfer prices for tractors are reflected in the wholesale price index for the current year, in subsequent years this index does not rise. However, the growing total for depreciation from the higher transfer price for tractors is calculated for about 10 years. This is one of the factors illustrating divergence in the movement of the wholesale price index and production costs.

A large part of all resources intended for the construction of buildings for animals are spent on buildings for cattle and swine. From 1981 to 1985 the cost per head of cattle increased by 17.8 percent at kolkhozes. There was a steady increase in inputs per head during the five-year plan. From 1984 to 1985 the cost per head of cattle increased from 892 rubles to 921 rubles, or by 3.2 percent, while for swine the figures were 373 to 405 rubles, or 8.5 percent. At the same time agriculture has not been compensated for additional costs involving improvements in construction price estimates.

An analysis of material inputs per unit of gross output at kolkhozes and sovkhoses permits the following conclusions. Crop and animal production costs continue to increase. This includes increases in prices for industrial output supplied to the countryside. According to our calculations, from 1983 to 1985 on the average for kolkhozes and sovkhoses in the former USSR Ministry of Agriculture the prices of material inputs of industrial products increased per unit of output. Total production cost increased over 2 billion rubles.

As is known, in accordance with the methodology worked out by the USSR TsSU and the USSR State Committee on Prices, since 1983 the index for purchase prices of agricultural products and wholesale industrial products sold to agriculture includes rates for services. These indexes should give information to assure control over the relationship between purchase and wholesale prices, their appropriateness to the quality of products delivered to agriculture, changes in kolkhoz and sovkhos outlays as a result of price movements.¹² The data obtained would help achieve the idea of price balance. The observation of price balance also means interlinked shifts in the relationship of wholesale prices for industrial products and purchase prices for agricultural ones, which, in the final account, do not change the cost accounting profitability of agro-industrial enterprises.

What has actually happened? From 1983 to 1984 the profitability of agricultural production (the relation between profits from sales and production costs) at kolkhozes declined 4.1 points (by 1.6 billion rubles) and at sovkhoses, by 4.2 points (1.4 billion rubles). Thus, total profits from productive activities at kolkhozes and sovkhoses declined by 3.00 billion rubles, including almost 1.5 billion through increased prices for industrial products. This tendency can also be clearly traced in 1985. In spite of almost a 4 billion ruble increase in the sales of agricultural products, because of production cost increases (6.2 billion rubles), compared to 1984 profits declined by 2.2 billion rubles, including 0.8 billion rubles in increased prices for industrial products. During this period the profitability of sovkhoses declined by 5.1 points, and that of kolkhozes by 2.3 points. It should also be noted that during 1984-1985 agriculture was paid no subsidies in connection with increased wholesale prices.

In order to create conditions so that agricultural enterprises can operate on self-financing principles by 1990 it will be necessary to considerably increase purchase prices if the present tendency in production cost increases it to be retained.

First of all, price index calculations do not include deliveries through Gossnab, consumer cooperatives and industry when it renders assistance to

agriculture. All these products are sold to APK enterprises mainly at wholesale prices of the enterprise or industry without any subsidies. To this one should add price increases in industrial products produced by the APK. For example, a PN-4-32 plow built by industry costs 151 rubles, while one built by the Semiluskaya Selkhoztekhnika in Voronezh Oblast costs 345 rubles, the prices for a 50 cubic meter tank are 1,330 and 1,741 rubles respectively. Secondly, in calculating purchase prices use is made of actual payments to farms, including markups and rebates for quality, markups over purchase prices for exceeding the average levels of product sales to the state in the preceding five-year plan and markups for low profit and money losing farms. Price lists are used to calculate wholesale prices for industrial products. Information on rates for services provided to agriculture is taken from the annual reports of the ministries and departments involved.

Thirdly, the different industrial products, quality indicators and labor productivities combined into subgroups for calculating average prices can, in subsequent calculations, significantly deviate from countrywide averages due to republic, regional and oblast peculiarities.¹³ This means a hidden differentiation in inputs and profit rates.

One should note that some types of industrial products are sold to agriculture at differing prices. Depending upon the regional consumption structure of industrial products, this has an influence upon growth in material inputs.¹⁴ Thus, tractors, agricultural machinery, trucks, mineral fertilizers, feeds and machinery for animal husbandry are sold to agriculture at wholesale prices which are lower than such prices for industrial customers; chemicals for crop protection, mixed feeds, light vehicles are sold at wholesale prices; petroleum products -- at industrial wholesale prices (plus turnover tax); cement, glass, lightweight roofing and lumber at industrial wholesale prices, other construction materials at enterprises wholesale prices f.o.b. suppliers' station. For nitrogen fertilizers alone there are about 10 types of products with prices ranging from 22 rubles per ton (liquid ammonium fertilizer) to 58 (ammonium nitrate) and 80 rubles (carbamide).

Fourthly, in calculating the wholesale price index temporary prices and price markups for some items are not included. The CPSU Central Committee and USSR Council of Ministers' decree "On Measures to Further Increase the Technical Standards and Quality of Machinery and Equipment for Agriculture, to Improve its Use, Increase its Production and Delivery in 1983-1990" authorizes, for up to two years, incentive markups over machinery wholesale prices for industry and for agriculture reflecting the economic effect obtained from improvements in reliability and reduced requirements for spare parts. The wholesale price index does not reflect increased costs of obtaining industrial products.¹⁵

The methodology in effect makes provisions for calculating a price index for means of production to include item quality or productivity. Calculations are made for all types of equipment, mineral fertilizers, crop protection chemicals and mixed feeds. This methodological approach should also be applied to construction. The cost per head for housing of livestock or for one square meter of productive or nonproductive building should be among the qualitative indicators. This is a fundamental factor, as the construction of productive

and nonproductive facilities accounts for 60 percent and more of capital investments in agriculture.

Wholesale prices for construction materials and lumber are calculated by using consolidated normatives and groups. The construction materials group includes cement, bricks, prefabricated ferroconcrete items, monolithic concrete and others. The list prices for these items do not grow. However, practically everywhere some of the above listed materials are replaced by others, leading to increases in the estimated cost for the project as a whole and in livestock housing. Annual report data show that the per head cost for housing animals is increasing, while price indices do not reflect this process.

Increases in inputs of industrial materials per unit of agricultural output which do not reduce agricultural production costs if other conditions do not change are evidence of: the continuation of pace setting rates in wholesale price increases, of unequal exchange, of the necessity in the immediate future to increase purchase prices in order to compensate for agriculture's objectively growing costs if there are no reliable barriers to increased wholesale prices for means of production without appropriate increases in their productivity.

In spite of the growth in industrial wholesale prices, for the past two years of the 11th Five-Year Plan, agriculture has received no compensation. As is known, an extensive reexamination of the purchase price system takes place about every 5-7 years, while total uncompensated expenses for increased wholesale prices and rates for services increase every year. In our view it would be advisable to annually compensate Gosagroprom for expenses due to increased costs of industrial products. In our opinion deductions from profits at the industrial sectors involved must be used to create funds to compensate for increased costs of material inputs per unit of agricultural output. Resources from this fund could also be used for comprehensive programs to create productive and nonproductive infrastructure, render targeted assistance to money losing and low profit farms and for other purposes.

Violations of equal exchange lead to specific contradictions between the stimulative or distributive functions of prices and financial and cost accounting indicators. To solve these the state turns to special subsidies from the state budget to regulate the difference in prices. Thus, to stimulate growth in meat production purchase prices were increased without any corresponding changes in retail prices. Such an increase automatically reduces economic indicators and frequently leads to losses by industrial sectors processing agricultural products. Increased meat prices are profitable only to producers. State budget resources are used to compensate processing sectors for the difference in prices arising as a result of increased purchase prices.

It should be stressed that when there is budget regulation of price differences, price and financial tools come into close contact, although at times they operate in opposite directions with regards to creating prerequisites for conducting operations on a cost accounting basis.

State subsidies are given to many enterprises processing meat, milk and other products and to compensate for differences in prices for equipment, fertilizer

and mixed feeds. In all, such subsidies are quite significant and as a consequence sovkhoses and kolkhozes do not have data on the actual costs of products. It is apparently necessary to convert to direct financial relationships for all payments to and allocations from the budget. This will help in approaching the introduction of genuine cost accounting at APK enterprises.

The system of two price lists does not improve the efficiency of intersectoral linkages in the APK. Producers of means of production do not have direct contracts with customers and are not interested in the APK's final results. They are primarily concerned about fulfilling their own plan. No matter what the wholesale price for means of production, their quality, efficiency or correspondence to world standards, the state will compensate the difference to enterprises involved in material-technical supply. Under shortage conditions for means of production there is a complete guarantee of their sales.

The lack of direct ties also deprives customers of the possibility of actively influencing assortment, quality and price of products produced by tractor and agricultural machinery building enterprises. Agriculture needs general purpose and comprehensive equipment. Wholesale prices' incentives function should be intensified. Wholesale prices for equipment should not only take into account real growth in productivity, but also be differentiated depending upon the comprehensiveness of deliveries and the extent to which equipment is general purpose.

The following can be suggested to strengthen customers' influence over the producers of means of production: if the cost of equipment produced at tractor and agricultural machinery plants exceeds improvements in its productivity, it is advisable that the price increases be eliminated from the industrial enterprises' reports used in calculating material incentives funds.

Together with measures to increase product quality at agricultural machinery building enterprises, there should also be an intensified role for sanctions against nonfulfillment of delivery contracts and low product quality. This requires passing a special law for the APK in general which would provide for sanctions against violating contractual obligations.

All additional costs due to additional outfitting and warranted repair of tractors, motor vehicles and other agricultural equipment and construction and land improvement projects should be linked to the material incentives funds of the appropriate enterprises.

In determining the size of sanctions it is necessary to include the value of output not produced due to equipment breakdown. Depending upon whose fault it is that the equipment broke down (a factory defect or bad repair) these sanctions are leveled against the material incentives fund and partially the wages fund of subdivisions at industrial enterprises.

It appears that conditions have still not been created for the more widespread conversion to wholesale trade in the means of production, while the wages fund in industrial sectors is not directly dependent upon the quantity and quality of means of production sold.¹⁶ The establishment of closer linkages between

material incentives funds and the size of various sanctions remains one of the more effective stimuli to prevent the production of obsolete and unproductive equipment.

FOOTNOTES

1. VOPROSY EKONOMIKI, No 1, 1987
2. "Planovoye tsenoobrazovaniye" [Planned Price Formation], Vyshaya shkola, 1986, pp 99-100
3. "Metodika razrabotka normativov rentabelnosti osnovnykh produktov rasteniyevodstva i zhivotnovodstva dlya planirovaniya razvitiya selskogo khozyaystva na 1986-1990" [Methodology for Working Out Normatives for the Profitability of Fixed Capital in Crop and Animal Production to be used in Planning Agricultural Development during 1986-1990], Moscow, 1984, p 6.
4. K. Marx i F. Engels, "Soch.," [Works] Vol 26, I, p 345.
5. K. Marx i F. Engels, "Soch.," Vol 23, p 73.
6. V. I. Lenin, "Polnoye sobraniye sochineniy" [Complete Collected Works], Vol 43, p 381.
7. K. Marx i F. Engels, "Soch.," Vol 23, p 404.
8. In the Methodology for determining wholesale prices and normative net product for new machinery, equipment and instruments having production-technical purposes it is stressed that price formation for new products should assure "a relative reduction in the costs of new products for the customer per unit of final utility compared to previous models. By final utility is understood improvements in basic use properties (productivity, power, longevity, reliability, etc), expressed in cost terms in economic effect." EKONOMICHESKAYA GAZETA, No 6, 1983.
9. Compared to 1984, in 1985 the average index for purchase prices was 100.6 percent, while the wholesale price index for industrial means of production was 101 percent. EKONOMICHESKAYA GAZETA, No 5, 1987, p 3.
10. The tendency of vehicle spare parts costs to rise will continue in the future, as ministries and departments have been authorized to approve wholesale prices for vehicle spare parts produced at non-specialized enterprises and intended for intradepartmental use. These prices are based upon planned production outlays and profitability normatives not more than 10 percent of production costs. EKONOMICHESKAYA GAZETA, No 51, 1986, P 16.
11. As a result of changes in the structure of raw materials use and increases in the share of components with higher wholesale prices, in the past year alone (from 1984 to 1985) total kolkhoz and sovkhos outlays for acquiring mixed feeds increased by 365 million rubles. EKONOMICHESKAYA GAZETA, No 5, 1987, p 3.

12. "Methodology for Calculating Purchase Price Indices for Agricultural Products and Wholesale Price Indices for Industrial Products Sold to Agriculture, Rates for Services Provided to Kolkhozes, Sovkhozes and Other Agricultural Enterprises and Organizations", Preyskurantizdat, 1986, p 7.
13. Average wholesale prices for petroleum products range from 61 rubles per ton for diesel fuel to 181 rubles per ton for gasoline (A-72, A-76) and up 257 rubles per ton for diesel oils.
14. Thus, while during the 11th Five-Year Plan, material inputs of industrial products at sovkhozes per 1 ruble of gross output increased by 5 percent, at sovkhozes in Amur Oblast, for example, they increased by 35 percent.
15. It should be kept in mind that since 1986 a new procedure for preferential incentives for new generations of equipment has been introduced. In 1986 total incentive markups grew by more than 15 percent and totalled over 600 million rubles. (EKONOMICHESTKAYA GAZETA, No 50, 1986, p 17). If such changes are made at the beginning of the year they are difficult to take into account when calculating price indices.
16. In the Political Report of the CPSU Central Committee to the 27th Congress it is stressed: "The time has come to solve this question. It is necessary that the size of the wages fund at an enterprise be directly linked to income from products sales. This will help eliminate the production and delivery of unneeded, low quality items and, as is said, working for the warehouse. Incidentally, this approach should not only be applied just in light industry.

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VOLOGDA OBLAST APK ECONOMIC EXPERIMENT VIEWED

Moscow SELSKAYA ZHIZN in Russian 3 Jul 87 p 2

[Article by L. Vologdin, chairman of the Vologda Oblast Agro-Industrial Committee: "Reliable Mechanism for Acceleration "]

[Text] During the June Plenum of the CPSU Central Committee, it was noted that improvements in the economic mechanism are closely associated with a conversion over to the normative methods for planning and skilful use of market-monetary relations through prices and financial-credit levers and the planned mastering and administration of the market, while taking into account its laws, and strengthening and raising the authority of the ruble. A definite amount of experience has been accumulated in our oblast in the use of these economic levers. The new principles for management of the agrarian economy are now being employed by us for the second year.

The kolkhozes, sovkhoses and inter-farm enterprises have developed independently their plans for the production and sale of all types of products to the state. In the process, they relied upon those norms which take into account an evaluation of the land areas and the availability of personnel and logistical resources. They employed the normative method when determining the annual wage fund and when distributing the limits for capital investments and logistical resources.

It is noted with satisfaction that the serious complications and conflicting situations that we feared never developed during the plan formation process. However, many farms and rayons undertook more tense goals than was earlier the case and they sought the levels called for in the scientifically sound farming and animal husbandry systems. And, even more importantly, they coped successfully with their plans.

The oblast's farms completed last year successfully. Compared to the average level for the receding five-year plan, the grain yield increased by 5 quintals and exceeded 20 quintals per hectare. The cow milk yields were raised by 270 kilograms and improvements were also achieved in the daily weight increases for cattle and hogs. The rate of growth in labor productivity was almost doubled.

The agricultural enterprises made maximum use of the financial resources at their disposal. From the profits realized, the sovkhoses employed more than

12 million additional rubles for expanding production operations and for paying off Gosbank loans ahead of schedule. Newly created centralized reserve funds in the amount of 16 million rubles were used mainly for compensating for the shortage in internal working capital and for financing additional capital investments. The net surplus profit (10 million rubles) that developed is being used for expanding production and for other planned measures.

The amount of time spent working under the new conditions clearly shed light upon some negative aspects which should serve as warnings to ourselves and others. This is particularly true in view of the fact that thousands of kolkhozes and sovkhoses throughout the country are now operating under the new conditions and in the future, as called for in the law governing a state enterprise (association), all farms will operate under these conditions.

The question concerning improvements in price formation was raised quite properly during the plenum of the CPSU Central Committee. Let us examine this question. Poultry production and hog breeding in the oblast have been converted over to an industrial basis. Production in these branches is well organized and has a rather solid material base. It is considerably more difficult to achieve such a level in dairy animal husbandry. The profitability for poultry producers is 50 percent and for hog breeders it is 70 percent, while more than one third of the dairy and beef farms are barely making ends meet. Yes and the branch as a whole, if we do not take into account the bonuses added on to the purchase prices, is operating at a low profitability level.

Cost accounting, which continues to play an increasing role in the economy, is adding new meaning to the question of the "profitability or unprofitability" of a particular product. This is particularly apparent in the case of poultry meat and milk. The contrast is even greater if we compare, for example, potatoes against flax or cucumbers against carrots. Each proprietor strives to produce expensive products on a low labor-intensive basis. And for the oblast it is all the same. What means do we have available for exerting influence. There are none with the exception of edicts and orders.

This is why the principles for the formation of purchase prices for agricultural products, as developed during the plenum of the CPSU Central Committee, were readily approved for the rural areas. Production concentration in the principal marketing zones, specialization and the proper placement of branches are truly in need of stimulation. Incentives must be issued to those who strive to raise labor productivity and lower production costs. The gradual conversion over to payments for agricultural products in accordance with contractual and accounting prices, determined on the basis of and within the limits set for the wholesale and retail prices for the respective final products, is in keeping with the interests of self-support and self-financing.

In turn, these measures require the labor collectives and the organs of APK [agro-industrial complex] administration to address these problems of resource conservation, production mechanization and the introduction of intensive technologies in a considerably more objective manner than is presently the case. At kolkhozes, sovkhoses and other agroprom [agro-industrial committee]

enterprises, a search is underway for reserves for economizing in the use of resources and a system of material stimulation is in effect which includes measures for issuing incentives to zealous workers and punishing (in terms of rubles) negligent ones.

USSR Gosagroprom [state agro-industrial committee] has taken a fine step towards encouraging the development of the grain economy. Tons of grain sold over and above the plan are traded not so much for rubles but rather for deficit materials required for construction projects of for farm equipment. The search in this direction should ideally be continued.

During the period of operation under the new conditions, we found and checked in actual practice many levers in the development of farming and animal husbandry. However, this cannot be said regarding the engineering service. As yet, this mechanism is being worked out only in several rayons. Thus, in the case of the Ust-Kubinskiy RAPO [rayon agro-industrial association], a unified service has been created at an RTP [remontno-tekhnicheskoye predpriyatiye; repair-technical enterprise].

An inventory of spare parts and repair materials and their centralized delivery and storage made it possible to eliminate a shortage of some and surpluses of other items. Above-normal supplies have been reduced by a factor of 1.5 and on some farms they have been eliminated entirely. The level of technical readiness of tractors, combines and agricultural machines has been raised. Expenses for repair work and technical services per standard hectare have been lowered by 14 percent and diesel fuel consumption has been reduced by 20 percent.

A unified cooperative-state association, the structure of which includes construction, installation, adjustment and planning organizations, has been created and is now in operation in the oblast. The contractual and economic construction methods have been combined. Although matters are still not proceeding smoothly, nevertheless some gratifying changes are taking place and particularly in connection with use of the economic method which ensures the availability of construction materials on a contractual level.

Meanwhile, the corresponding departments and administrations of RSFSR Gosagroprom have taken a position with regard to our experiment which borders upon being an obstacle in our path.

For example, how is it possible to reveal the advantages of our system if a steady decrease is taking place in the allocation of the principal construction materials, sanitary engineering equipment and construction mechanisms? Or, even worse, when funds for certain materials are unexpectedly withdrawn or these funds are made available to the oblast in the middle of the planned year.

During the course of restructuring, basic changes took place in the administrative structure. The number of staff personnel declined by 25 percent compared to that found in separate departments. The number of administrative personnel at the rayon level declined by 13 percent.

Based upon the experience of leading farms and with the active assistance of specialists from the republic's Gosagroprom, several special purpose programs have been developed and are being carried out in the oblast both in animal husbandry and farming. They are aimed at achieving the following results during the current five-year plan: raising the oblast's grain yield to 25 quintals per hectare and the productivity of the dairy herd to an average of 3,000 kilograms of milk per cow.

The restructuring program is increasing in tempo. Although we have been operating under the new conditions for only a year, nevertheless a fine basis has already been obtained which will make it possible to take more confident steps in connection with carrying out the country's Food Program.

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STAVROPOL APK SELF-FINANCING, ECONOMIC MANAGEMENT

Moscow PRAVDA in Russian 22 Jul 87 p 2

[Article by I. Boldyrev, First Secretary of the Stavropol CPSU Kraykom: "Self-Financing and Self-Maintenance"]

[Text] The novelty and scale of problems examined at the June Plenum of the CPSU Central Committee corresponds to the best traditions of Lenin's party. Urgent problems concerning restructuring were posed with the boldness, rectitude and thorough scientific foundation characteristic of the party, and an extensive program of radical reforms in economic management was decided upon. A great deal must be initiated without delay and without oscillation. Time will not wait. It has always been valuable but now it has become especially precious.

While confirming the aforementioned I am basing my statements on the experience accumulated under the conditions existing in Stavropol Kray. This experience relates to the transition of kolkhozes and sovkhozes and various links of the agro-industrial complex to self-supporting production and self-financing. This was the purpose of the economic experiment that was started on the basis of a decision of the CPSU Central Committee on 1 January 1986. One of the requirements was that agricultural production output be expanded by enterprises using their own resources without the use of state subsidies. How was this to be achieved?

First of all, the role and place of the kray agro-industrial committee was determined. This turned out not to be one of the simpler tasks. There were acute departmental barriers between production, processing and service branches of agricultural production which had to be eliminated. Requiring considerable effort was the development of a methodology for equal-intensity planning to stimulate the highly efficient labor of workers in every enterprise--the basic link of the economy. This brought with it the introduction of scientifically increased norms for wages, fuel and energy resources, overhead and so forth. Cost accounting with a check form of control over ongoing expenditures was to become an important factor. It was necessary to systematize the bank accounts of partners within the agro-industrial complex for which it was considered to be essential to hold regular common joint accounting sessions. This provided the opportunity to carefully keep track of the condition of debtor and creditor financial obligations.

It might seem that the problems were private and special. But if you get caught on a "nail," that bothers everyone greatly, the view from above concerning the problem is less superfluous. There were no fewer than 50 such problems at first, then 30 and finally about a dozen. They were dealt with with the help of a "hammer" of wise decisions, many of which were passed by the plenum of the party kraykom. The kraykom traced the circle of obligations of the agro-industrial committee and its strategic and tactical goals. This prevented future needs for petty surveillance on the part of party committees. Under new conditions this would be intolerable.

From the point of view of psychology the situation was not a simple one. Self-financing began to immediately infringe upon the command-pressure style of economic management and required its democratization. Income and expenditures and an accounting for profits and losses were to be carried out now not only by administrators and related personnel but by common workers as well. Moreover, this had to be done consciously, knowledgeably and without error. Material rewards were tied to this and depended directly on specific financial results.

Local party organizations were given the responsibility of "regulating" relations between directors and subordinates. It should be said that most dealt successfully with this. Almost everywhere it was possible to combine economic and professional training. It was as if people were reconceptualizing the principle according to which the kopeck spares the ruble. Whereas previously someone could take a bag of grain to the mill on a powerful tractor without considering transportation expenditures, now wastefulness is ruled out--in this kind of situation it is more advantageous and judicious to utilize a horse and wagon. A shepherd who is repairing a dilapidated fence will pull all the good nails out of the old boards and save them; after all, they cost money too. This is the new attitude towards big things as well as small.

What can we say about the directors of labor collectives? Their positions themselves require that they become "conductors." Many had all of the necessary qualities for this. The contingent of economic managers has been developing for years in the kray. The kray party organization gives constant attention to strengthening this contingent. We have experience which justifies itself completely and totally. Here, for example, we have the long-term practice of the so called stazher [intern] system. It has helped to considerably strengthen the contingent of kolkhoz chairmen and sovkhos directors.

What is the essence of this program? Each year a group of 20-25 people is selected from among young agricultural specialists for study in the department for increasing qualifications of the Stavropol Agricultural Institute. In order to qualify for the training one must earn a higher-education diploma and develop certain qualities--organizational, analytical and moral-political. After the stazhers complete the course they travel to the best enterprises in Stavropol Kray, the list of which has been confirmed by the buro of the CPSU kraykom. They have a practical internship with the directors of these enterprises for periods of 4 to 6 months. They learn the secret of management

by means of personal experience and their own observations, acquiring these first hand, as they say. In the course of the last five-year plan 144 persons have taken the stazher course and 86 have already become kolkhoz chairmen or sovkhoz directors.

Let us take for example the current director of Staromaryevskiy Sovkhoz, Mikahil Nikolayevich Pereverzev. By education he is a veterinarian. He worked as a party committee secretary in a kolkhoz. He was chosen for the stazher course. Oleg Mikhaylovich Meleshko, chairman of Orlovskiy Kolkhoz, became his mentor. The candidate for advancement learned well the methods of a careful manager who did not recognize commercial defeat and firmly mastered economic knowledge.

Soon he became the head of a labor collective himself. The burden was not an easy one. He took over the Staromaryevskiy when it had experienced 706,000 rubles in losses. This was 2 years prior to the transition to self-financing. The preparation for it included the introduction of start-to-finish cost accounting and the transition of all subdivisions to collective contracts. The new director seemed to "litter" with money, moving, for example, toward the 100 percent use of land methods of radical top-dressing and turning down the services of agricultural aviation. This resulting in the doubling of grain productivity. Last year an average of 30.6 quintals per hectare were harvested. Feed production improved. This resulted in growth in milk yield. Paved roads appeared on dairy farms and the mechanization of labor-intensive processes increased considerably. A great deal of attention is being given to housing construction and to improvements in the social sphere and in everyday living conditions. The transition to self-financing has become a logical continuation of what was begun. There are no more losses. Last year the Staromaryevskiy achieved 337,000 rubles in profits without supplements to procurement prices for agricultural products (with these supplements total profits equalled 2,710,000 rubles). Perevezrev says:

"Personally for me self-financing is self-maintenance. I was able to test my strength and to show what I am capable of."

This is what is characteristic for most of the young economic managers who have come to the helm on the eve or in the course of the experiment. They are characterized by enterprise and by the ability to deal with practical problems not by "a feeling" or "intuition" but on the basis of a high level of competency and economic knowledge which help them to evaluate exactly that which has been achieved.

It was more difficult for those who were still dominated by the burden of old habits and outdated management methods. They did not agree with self-financing from the very beginning as evidenced by the fact that they supported restructuring concepts in word only and did not make an effort to carry them out in practical terms. It was necessary to find replacements for some directors. Thus, V. Borodenko, kolkhoz chairman in Novoaleksandrovskiy Rayon, was fired. He was wasteful as a director and did not prevent his subordinates from being wasteful as well. The enterprise was moving downhill, losing in the productivity of fields and farms. As for self-financing here it was said with irony that the system was not for them, therefore it was not taking root.

It was necessary to change the minds of such people. That which V. Borodensko could not deal with is being successfully achieved by his successor.

The introduction of election principles in the selection of economic managers was very useful. It is characteristic that those who are generally liked are strong not only in agronomy, zootechnology or engineering but also are sufficiently well prepared as economists and are capable of skilfully representing the commercial interests of their collective. This is understandable--in the sea of commodity-financial relations a dependable and trustworthy "pilot" is needed.

From the aforementioned it follows that in connection with self-financing even party workers had to once again reaffirm themselves. This included everyone without exception, including me. Today it is not enough to orient ourselves in economic processes no worse than an experienced manager. It is necessary for oneself to determine and embody the standard of competency. I will anticipate a question: For what purpose? After all, kolkhoz chairmen and sovkhoz directors are maximally independent and no one has the right to encroach upon this. The power over them as it existed quite recently is unacceptable under the new conditions.

How will I comment on this? The power of the intelligent thought, of a businesslike proposal or of a weighty argument will always remain in force. All we have to do is use it skilfully while improving the art of convincing others. It is unthinkable without overall and basic readiness. This is attested to by the experience of the first secretaries of the Petrovskiy, Apanasenkovskiy, Georgiyevskiy and Kirovskiy party raykoms, I. Tolstoy, I. Koshelya, Yu. Bocharnikov and S. Romanko. Economic managers always listen willingly to their opinion. This is done not because "those are the orders" but rather in confirmation of the proverb that "Two heads are better than one."

It is not easy to gain such recognition. On the path disruptions and failures are possible. The buro of the party kraykom had serious complaints about I. Gromov, first secretary of the Shpakovskiy Rayon CPSU Committee, who tried to assert the command style of leadership. While giving a great deal of attention to "everyday activities" he lost sight of the future. This was manifest, for example, in cadres policies. There were many shortcomings here. Among kolkhoz and sovkhoz economists 17 percent do not have a higher education and almost half of the bookkeepers have no practical experience. But under self-financing conditions success depends to a large degree on the training of these specialists. This is what the raykom secretary should have focused his attention on. I feel that this is of use to him personally as well as for the entire party raykom.

Yes, self-financing has taught and continues to teach the kray party organization a great deal. While delving into the new laws and evaluating the principle phenomena provided a foundation by these laws, we are trying to raise the level of analysis of party work. That which previously might have appeared to be a detail now appears different--more serious, more significant, weightier. Let us look at this fact. Kolkhozes and sovkhozes have begun to sharply curtail the procurement of agricultural technology and spare parts.

During last year and this year they have achieved a savings of about 15 million rubles by doing this. We can assume that this regimen of economizing is in effect and that it stems only from self-financing. But something else did have an effect. The demands placed on directors from both above and below have increased. Economic mistakes are not forgiven. They are always discussed in the course of regular discussions with managers-communists in all party committees as well as during the affirmation at these meetings of business measures in labor collectives with public discussion of both advantages and shortcomings.

During the year of operations under the conditions of the economic experiment gross agricultural production output in the kray increased by 12 percent as compared to the average level of the 11th Five-Year Plan. The government was sold more than during a comparative period: 10 percent more grain, 14 percent more meat, 13 percent more milk and 10 percent more eggs. The level of profitability of agricultural production reached almost 34 percent. Profits equalled 664 million rubles, which is greater than the results for 1985 by a factor of 2.5.

Self-financing is being affirmed not only in the kray's agro-industrial complex. Some industrial enterprises have also adopted it. Their precise number is 18. But as of yet there has been little use in this. Central economic organs turned out to be unprepared to support this important initiative. Many basic questions related to self-financing had not been thought out by them, the process of "shaking down" various normative documents is taking an intolerably long period of time and as of yet the system for distributing profits and deductions earmarked for the state budget and funds of enterprises remains unclear. Because of this party committees were also not able to prepare their labor collectives for the transition to new work conditions.

It is obvious that the old does not give way easily to the new. Opposition can be removed only through joint efforts by means of a comprehensive approach to dealing with problems that may arise. Great matters are introduced peacefully. This is the intention of the decisions of the June Plenum of the CPSU Central Committee.

8228

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RESTRUCTURING OF COAL MINING INDUSTRY EXAMINED

Moscow IZVESTIYA in Russian 20 Jul 87 p 2

[Article by M. Shchadov, minister of the USSR coal industry (1), V. Kuznetsov, general director of the Kemerovougol Association (2), and V. Solovyev, hero of socialist labor, deputy of the Supreme Soviet of the RSFSR, and brigade leader of the 50th Anniversary of October Open Pit Mine of the Kemerovougol Association (3), under the "IZVESTIYA Questionnaire" rubric: "Three Questions on Restructuring"; first two paragraphs of each numbered section are IZVESTIYA introduction]

[Text] (1) The June Plenum of the CPSU Central Committee set the task of converting from administrative to economic methods of managing the national economy and freeing sector staffs from the functions of the operational management of enterprises.

How does your ministry propose to perform this task?

The conversion in January of this year to the new conditions of management once more affirm the importance of economic methods of managing the coal industry, the basic unit of which is the production association.

The development and adoption of long-term norms (for a five-year plan), the stability of plans established, attention to the fulfillment of contract obligations, improvement in the quality of output, increased sense of responsibility and self-discipline, and personal intensification of the human factor have had a positive effect on the sector's work. Just the first steps of restructuring have made it possible to meet the production program for the first six months, to bring to the surface more than 8 million tons of above-plan fuel, and to improve technical and economic indicators. The Severnaya and Kapitalnaya mines in the Kuzbass and other enterprises have shown a taste for working economically and have found interesting forms of effectively employing economic accountability.

Unfortunately, unjustifiably low wholesale prices for coal are a brake on more rapid conversion of all coal enterprises to complete economic accountability and self-financing.

This has made the sector the only one in the country planned to operate at a loss. The sector's workers are also engaged in regulating the anti-cost mechanism, economic levers and methods of management, and systems for motivating workers' collectives for high end results.

To convert from administrative to economic methods of management and free the ministry's central apparatus from solving operational problems it is planned to carry out a number of measures to rebuild the sector's managerial structure. In particular the sector's own administrative staff is to be cut sharply. The Ukraine's republic ministry and all-union production associations are being abolished. On the base of the existing relatively small coal-mining production associations it is planned to create large-scale ones capable of independently fulfilling government orders and solving the problems of expanded production and social development. The fitness of this is confirmed by the positive work experience of the leading Donetskugol, Karagandaugol, Kemerovougol, and Yuzhkusbassugol associations.

There is serious work ahead -- to put into shape the management of the mine construction industry, the scale of which now exceeds 2 billion rubles annually. It is planned to simplify the many layers of management by converting it from a four or five level system to two levels, and to a three-level system in Donetsk, Voroshilovgrad, and Kemerovo oblasts. We think that this will make it possible to improve the maneuverability of materiel, labor, and other resources and accelerate the processes of the design, coordination, and timely startup of production facilities, and chiefly of facilities in the social sphere.

The management of coal machinery building plants will be concentrated in the ministry. This will create conditions for immediate participation by all the structural subdivisions of the central apparatus in improving the efficiency of the machine building industry.

In responding to the solution of the main problem of providing the national economy with high-quality fuel, the ministry is concentrating its attention on developing the sector's future and accelerating scientific and technical progress and the economic effectiveness of the industry.

(2) Restructuring the economic mechanism begins with the basic unit -- the enterprise and the association. The principles of independence, self-financing, and complete economic accountability have become the law for their activities.

What in your opinion must be done to affirm these principles in managerial practice?

For us the principles of independence and self-financing are no secret behind seven locks. Restructuring has compelled staff to deal seriously with economic self-education and to carefully study the principles of economic accountability. Our association has already acquired definite experience. Take capital construction, for example. Two years ago we were hard pressed to

cope by managerial methods with nearly 17 million rubles of construction and installation work. But now we have dealt with 45 million. We are now also building industrial enterprises and handsome housing. What we get is no worse than on a contract basis and it is considerably cheaper: every kopeck saved is our own.

Now the issue is how to make ends meet under conditions of self-financing. The majority of the association's enterprises are operating at a profit. Annual profit amounts to 130 million rubles. There is no threat from the financial side. Our funds are substantial. However, in the period up to 2000 we are to increase open-pit mining from 67 million to 100 million tons. For the government's benefit we are to double labor productivity at open pits and to reduce the production cost of coal to half what it is at the best mines. But a considerable part of our enterprises must be renovated and new ones set up. Housing and social-domestic construction must be carried out on a large scale. The costs just for the next year are over 250 million rubles. Where will this money come from?

In our view, the accelerated expansion of coal production largely depends on improving the pricing system. Depending on quality, a ton of Ekibastuz coal costs from \$30 to \$50 on the international market. Give us access abroad and we will get rich. But on the domestic market the association sells coal at an average price of 11 rubles, 40 kopecks. This is why we come with outstretched hand to the state budget. Even from above-plan profits the open pit is left with crumbs. This year we plan to spend 23 million rubles on housing and other non-production construction. But the association's entire social development fund amounts to 2.3 million rubles. One-tenth as much.

Siberian coal is cheap coal. Mother nature herself saw to that by leaving us thick seams at a relatively shallow depth. Reduction in production costs is aided by the broad use of the most advanced technology, and specifically by mining coal by the open pit method. But a blessing cannot be allowed to turn into grief. Construction of a building is more expensive in Siberia than in the country's southern regions: walls must be made thicker and the roof must be better insulated. Moreover, the maintenance of buildings and structures calls for additional expenditures. The state sets Siberian wage rates. And all this must be taken into account when setting prices. Otherwise we will have a situation where we will increase output not where it is profitable but where it is convenient for someone.

And there is one more thing I want to say. We must more rapidly adopt wholesale trade in material resources. Life compels this. In six months our association produced about 600,000 tons of coal above target. Naturally, we used up more diesel fuel, tires, and explosives. But our funds for these were not increased. What to do? The money is there, the need exists, but we are not allowed to buy.

(3) Radical economic reform is inseparably linked to the expansion of democracy, putting the principles of social justice into practice, and overcoming egalitarianism in evaluating everyone's labor.

How do you think we can manage it so that a good worker will live better than a careless one?

The shift is over. Ask any excavator operator: "How many cubic meters of overburden did you take off the bank?" He will answer almost without thinking, since it is quite precise. "And how much did you earn?" Here it will often not be wholly clear to the man. Calculations are considered merely approximations when the issue is weekly or monthly pay.

Yes, there are wage scales. But under the presently existing system of calculations between the enterprise and the worker in the coal industry this amounts only to about 40 percent, while 60 percent is for supplemental pay and bonuses.

But couldn't it be simpler? No doubt it could be. Why haven't scientifically based norms been set up sooner and firm rates set? Discuss these at a workers' meeting so that it is all open and fair. Then get them approved by joint decision of the administration and the trade union committee. Let's say at this face a cubic meter of overburden is worth 5 kopecks, while at the next one, where conditions are better, 3 kopecks are enough. Do your work. Dig in, figure it out, and make a mental note of it. Then revise it against the surveyors' measure and go to the cashier.

Why not do it that way? Why, instead of a short straight road do we choose a wobbly and round-about path? Simply because that helps to even out the overall pace. He who has done his best and with regard to earnings has far outstripped the average indicator will always try to find a reason to slightly reduce one of the coefficients; he who from the fault of management has long been idle or detained by repairs manages to augment the unearned part and to stifle dissatisfaction with his own lack of initiative.

Naturally, a person needs an apartment in a well constructed building. Without a good store and without a club or a stadium life is dreary. An what of a school? A hospital? The administration of our open pit and the housing council never lose sight of the problems of the social and domestic infrastructure. We do not allow drunks or brawlers on the loose, and we maintain public order in the entire community. There is concern enough. However, in upholding the principles of social justice we must devote special attention to improving the organization of production and primarily to getting rid of egalitarianism.

This is not a simple task. One person is completely satisfied with wages in the area of 120 rubles. And he will choose a job accordingly. Another needs 400-500 rubles a month for the family budget. And he sets out to mine coal. Should we take account of this? We must. We must create all conditions to make these wages available. We must not overpay the idler or the bumbler, who clearly does not want to improve his qualifications. And so, since the engineer service is not ready to support the honest and conscientious worker with the proper work, let the enterprise respond with money.

The common woe of Kuzbass open pits has been the shortage of motor transport to haul coal and rock. In places they have been short by 700 drivers and trucks. But they introduced the collective contract, set wages in direct relation to the amount of rock mass removed, and everything was settled: with the same vehicle inventory we are now supporting a substantially increasing output. Without question, a collective's success is determined by improved technology and the proper organization of production. But in the period of restructuring the wage system should also be accelerated.

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MINISTER ADDRESSES FUELS INDUSTRY RESTRUCTURING PROBLEMS

Moscow STROITELSTVO TRUBOPROVODOV in Russian No 6, Jun 87 pp 1-9

[Unattributed article under the "Implementing the Decisions of the 27th CPSU Congress" rubric: "The Sector's Most Important Tasks are To Deepen Restructuring and Improve Personnel Work"]

[Text] The party has designated the following basic means for accelerating the country's socio-economic development: the utilization of the latest achievements of science and engineering; a radical improvement of the economic mechanism and the entire management system and the utilization of human potentialities, which means a sharp increase in social and labor activity.

Economic bodies have enormous responsibility for realizing the party's strategic course of acceleration. In construction, these bodies are the ministries, main administrations and trusts.

The Collegium of Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] held an expanded meeting with the presidium of the Central Committee of the Oil and Gas Industry Trade Union to discuss the tasks of the ministry's organizations and enterprises to deepen the restructuring and improve personnel work in light of the requirements of the January 1987 CPSU Central Committee Plenum.

V.G. Chirskov, USSR Minister of Construction of Petroleum and Gas Industry Enterprises, spoke at the meeting. He thoroughly analyzed the progress of sector restructuring in such directions as the reorganization of the economic mechanism, the acceleration of scientific-technical progress and personnel policy.

Economic Mechanism

The basis for restructuring in the construction industry is the conversion of construction organizations and industrial enterprises to new economic conditions. The main goals of economic restructuring are to hasten construction and to improve work efficiency and quality. The target integrated program "Restructuring the Economic Mechanism in Minneftegazstroy in the 12th Five-Year Plan" defines the key directions for improving the economic mechanism in the areas of planning, management, finance, pricing, interrelationships between construction participants, labor incentives and

cost accounting, analysis and inspection. For this program to be implemented, it must be reinforced with daily, specific practical steps at each management level.

The three most important elements of restructuring the economic mechanism must be accomplished in parallel: a transition to full cost accounting, self-support and self-financing; the implementation of collective contracts and a transition to new wage conditions. These three elements are intimately interconnected. They should reveal each collective's reserves and production potentialities, transforming them into improved efficiency, faster construction and improved quality.

The 1987 State Plan for Economic and Social Development reduces the number of approved indicators, strengthens the role of stable economic norms and expands the planning rights of organizations and enterprises.

As of 1 January 1987, five main administrations, totalling 43 construction-installation trusts, have converted to full cost accounting and self-support. These have a work volume of 2.6 billion R, or 40 percent of the ministry's total volume. Simultaneously, 44 trusts and associations, with a total volume of 2.1 billion R, became self-supporting. In 1988, ten main administrations and 87 trusts will be converted to full cost accounting and self-financing; this represents about 60 percent of all construction-installation trusts in the sector.

All the sector's industrial enterprises had been converted to the new economic conditions as of 1 January 1987. Preparations have begun to convert them to full cost accounting and self-financing by 1 January 1988.

However, the sector's economic mechanism is being restructured too slowly. The main reason is that many organizations, and many trust managers personally, are not prepared for work under the new conditions.

Moreover, present studies provide the basis for an expanded discussion of the problem of converting to full cost accounting and self-financing. In accordance with the indicators and economic norms established for the five-year plan, the sector is to have sufficient income to finance all its social and production development, beginning in 1988. Therefore, the next step is to prepare to convert the entire sector to full cost accounting and self-financing in 1988. This requires the careful development of a system of norms, and the calculation of the necessary centralized funds and reserves, subsidy limits etc.

Important factors in the preparatory work are the improvement of planning; the conversion of trusts to collective contracts and the restructuring of intraproduction cost accounting. The basis for the implementation of collective contracts must be an improvement in the structure of low-level collectives; namely, the formation of consolidated brigades, sections and spreads with a single wage scale, based on end results, for all workers.

Shortcomings in economic-planning work are retarding the pace of collective-contract growth. At the beginning of the plan year, organizations, as a rule, do not have the stable plan tasks necessary for

signing contracts. Low-level planning is poorly developed. Collective contracts have aggravated the problem of the validity of planning labor indicators, which now have little relationship to the specific work performed according to the contract agreement. The collective receives a stable wage norm for the five-year plan, but in fact it does not have a stable program. All of these problems have become crucial.

Experience shows that energetic leaders who have initiative and who clearly understand the need for restructuring can surmount these difficulties. SMU-2 [Construction-Installation Administration] of Ukrvostokneftegazstroy Trust, SMU-2 and SMU-6 of Mosgazprovodstroy, SMU-2 of Rostovtruboprovodstroy Trust and many others already have converted to collective contracts. Samotlortruboprovodstroy was the first trust in the sector to conclude a collective contract agreement, with Glavtyumentruboprovodstroy. Spreads have been established and superfluous management links have been eliminated in this trust. Because of restructuring, the trust fulfilled all the indicators in its 1986 program. According to the results of the All-Union Socialist Competition, the trust was awarded the Challenge Red Banners of the CPSU Central Committee, USSR Council of Ministers, AUCCTU and the Komsomol Central Committee.

At the same time, because of inertness, the concept of "efficient management methods" is still just a slogan for many managers. We must not allow restructuring to be put off until tomorrow or the next day. At least the basic trusts in each main administration must be converted to collective contracts this year, while the majority of organizations must be using this method in 1988.

Wage restructuring, based on increases in wage rates and salaries, is especially important in forming the new economic mechanism.

The organizations and enterprises themselves must search for the means to convert to the new wage conditions. For this, a series of measures must be realized to reduce the actual number of workers, and to ensure at least a 6- to 8-percent increase in labor productivity for each organization and enterprise during the year of conversion. This work requires skillful calculations and a certain level of mastery of economic analysis. The solution to the problem is first to organize practical education, using specific calculation examples and production situations, for specialists from base organizations, which are to be established in each main administration. Then, these base trusts must be transformed into permanent schools within the main administrations.

This year, all base trusts and enterprises must be converted to the new wage conditions.

A direct condition for the economic efficiency of construction organizations and for the conversion of organizations to full cost accounting and self-financing is conservation of both large and small items. The stability of estimated prices must be monitored carefully.

The carry-over material stocks for the ministry overall have decreased by 15 days compared with 1986, and now total 281.9 days; however, a number of

main administrations have stocks exceeding 350 days. Left-over stocks of extra unused materials are increasing. Beginning this year, construction organizations and enterprises will pay a 3-percent fine to the state budget for exceeding the established limits for material stocks.

The capital-output ratio of active fixed production capital for construction purposes increased by 3 kopeks compared with last year, and reached 1 R, 55 kopeks per 1 R of capital. However, this ratio remains low in a number of main administrations.

Because of shortcomings in production and management activity, as well as economic stagnation, certain main administrations and organizations have exhausted the working capital allocated to them for production purposes. The only way to find new capital to make up for the working-capital deficiency is to increase profits, eliminate unprofitableness and achieve additional above-plan profits. All losses of financial resources leading to shortages in working capital must be stanching quickly.

This year, the ministry stopped providing subsidies to construction organizations for planned losses. Beginning in 1988, other subsidies will be sharply reduced. Dependence must be eliminated from the economic relationships of the sector's organizations and enterprises.

The transition to efficient management methods and the restructuring of the economic mechanism depend critically on the skills of our personnel, who must know their work and be able to realize the entire complicated series of measures for converting to the new economic methods. Managers of main administrations and construction-installation administrations are to be tested for economic knowledge. The sector must institute compulsory economic education.

In the economics of oil and gas enterprise construction, everything is interrelated. The implementation of collective contracts and the transition to contract prices will not have the maximum effect without a corresponding restructuring of construction-program planning. The conversion to the new wage rates and salaries, and stable operation under these conditions are impossible if the sector does not change its approaches to planning wage norms, and if it does not improve the management organizational structure. The tasks for increased labor-productivity are closely linked with measures to implement new equipment and with structural and address changes in the work program. The profits and the economic-incentive funds depend largely on the production volumes, the production conditions, the structure of the work performed, the increase in labor productivity, the level of economics work and a number of other factors.

It is impossible to convert to new forms of construction supply, for example, providing material resources for oil and gas construction projects through wholesale trade according with the demand determined by plans and estimates, without: 1) clear planning of the production program, 2) realistic two-year planning and 3) timely preparation and provision of complete planning estimates. Strengthening intraproduction cost accounting is unthinkable without the proper organization of primary accounting and

low-level planning. Realization of the sector's economic and social tasks requires a fundamental restructuring of all our activity.

Scientific-Technical Progress

The driving link and the main lever of restructuring is scientific-technical progress. Permeating all functional areas of the sector, this progress is the foundation for active changes in engineering, technology and economic and social activity, and also is a way of measuring the quality of all levels of collectives.

In the sector, much good work is being done to accelerate scientific-technical progress. Every year, over 300 new-equipment-plan measures are realized, 8-10 new types of machines are implemented and 10 progressive technologies are implemented. However, the needed breakthrough in the production implementation of scientific-technical achievements still has not occurred. The important economic targets for the ministry are not supported universally with truly revolutionary scientific-technical innovations. The main efforts of the scientific-research institutes and design bureaus continue to be wasted on the improvement of old organizational forms and technologies, and on the modification of existing machines. All this slows the implementation mechanism. The economic levers of development and innovation really are not being applied.

Science must set the tone for sector development. Meanwhile, not only individual scientists, but also entire subdivisions are inactive. They have stopped thinking creatively and acting with initiative. For example, in nearly 15 years, the All-Union Scientific-Research Institute for the Construction of Main Pipelines, the Experimental Design Bureau for Reinforced Concrete and the SibNIPigazstroy Scientific-Research and Project Institute have not solved the problem of a concrete-encasement technology for pipes or the problem of using these encased pipes. To date, no one has developed a fully equipped, standard temporary worker settlement which meets modern requirements. The sector does not have a reliable, certified, progressive insulation material for wide use in pipeline construction. The problem of cleaning pipes and preparing pipe surfaces for insulation coating requires a final solution. There has been no visible movement toward the wide use of unwoven synthetic materials, the high efficiency of which has been proven in practice. The reaction has been just as slow to the progressive method of freezing anchors.

Scientific and design organizations have not taken the lead in problems of improving the design and quality of steel pipe.

After many years, there has not been a practical solution to the problem of equipment and technology for producing-site construction in Western Siberia.

Little progress has been made in year-round construction, especially of main pipelines, under West-Siberian conditions. The ministry has posed a fundamentally higher goal, but it is not being supported by truly revolutionary proposals to convert equipment and technology for year-round construction.

Our sector performs over 80 percent of the complete-modular construction volume in this country. Only by doubling the volume of modular construction will we be able to meet our five-year-plan tasks. For this, all oil and gas construction projects, without exception, must be modified for complete-modular construction. But this must be preceded by improved standardization of project solutions. Only recently, a standard block box was approved through the efforts of a new institute, NIIKBS [Scientific-Research and Project Institute of Complete-Modular Construction].

Neither SibNIIgazstroy nor the Experimental Design Bureau of Reinforced Concrete have contributed anything significant yet to the technology of manufacturing complete modular structures. Glavsibkomplektmontazh, which includes a specialized design subdivision (a Special Project-Design and Technology Bureau), is aloof from the solution of this problem. Only now, after a delay of 10-15 years, has the main administration developed process lines, in a joint effort with the Institute of Electric Welding imeni Ye.O. Paton. Thorough restructuring has not affected either the collective overall or its leaders; a horse-and-buggy mentality has estranged enormous reserves of industrial production and human potential from the restructuring.

Managerial competence, foresight and a feeling for innovation largely determine the success of implementing the achievements of scientific-technical progress in the sector. Take, for example pipeline welding. The wide implementation of automatic welding furthers the aim of increasing the work pace and achieving the best quality. This is our technical policy.

The sector has considerable experience in using Sever resistance-welding systems. However, Glavvostoktruboprovodstroy has not mastered this equipment after 2 years. This shows that the main administration has a negative, rather than an a positive, attitude toward new equipment.

The work rates using Styk systems are inadequate, especially the Voronezhtruboprovodstroy and Bryansktruboprovodstroy Trusts. Given the poor utilization of high-production equipment, how do these trusts expect to operate on the basis of self-support and self-financing?

The ministry has posed the task of achieving 70 percent automatic welding on main pipelines and 50 percent on gathering pipelines. Meanwhile, the entire engineering staff of the most skilled installation main administration, Glavneftegazmontazh, which has an entire arsenal of equipment (automatic submerged-arc welding, argon-arc welding, resistance welding and brazing) in 1986 achieved only a 15-percent level of automatic welding.

Production restructuring is impossible without equipment reconstruction and modernization. Meanwhile, the Trubodetal Production Association (formerly the Novosineglazovskiy Construction-Structure Combine), which has unique equipment and which includes a design bureau, is not taking effective measures to improve the production of pipe branches. There are no proposals either for thermal hardening of pipe articles to obtain a 12-15 percent saving of steel, or for converting to ordinary steels.

The implementation of scientific achievements largely depends on the production organizations. But, scientific discoveries and developments are the province of the scientists themselves; these activities involve creative attempts and efforts, and the careful organization of science. The person leading a scientific collective must be not only the most competent person, but also must be strong-willed and have considerable moral authority. Unfortunately, the sector's scientific establishment has many people who place their personal interests first. Especially troubling is the lack of objectivity by scientists in evaluating their own developments and alternative solutions which can be borrowed very effectively from other sectors and institutes at lower cost. Because some individual scientists do not share the official attitude and continue to protect their vested interests, the sector has suffered and will suffer irretrievable losses, because of greater lead times for developing new equipment and because the equipment is not up to modern standards. It is sufficient to remember the mistaken proposal by the Beloyarsk Insulation Depot for an electrostatic insulation-application technology, at the expense of an extrusion technology. In a number of cases, the unobjective evaluation of scientific developments leads to premature decisions and, as a result, the waste of state capital.

Obviously, the creative atmosphere and a creative approach are not the only factors promoting the origination of ideas and the development of fundamentally new solutions which provide technological and equipment breakthroughs. Scientists, workers, ministry staff, designers and project designers are the bearers of ideas and creative principles. These talented people, wherever they work, must be given the care and attention they deserve.

Recently, much has been done to bring science closer to production, and to improve the results of science. However, some theoretical research has been forgotten in this effort. The neglect of fundamental science sooner or later will be detrimental to equipment and technology advancements in the sector.

In the near future, program managers and the Main Technical Administration must examine the effectiveness and activity of all sector programs, refine these programs, determine the expenditures, balance them with the material and financial resources and coordinate them on the basis of the approved "Statute on the Management of Scientific-Technical Progress in Minneftegazstroy."

The sector's organizations and enterprises should enhance the role of the engineering-technical services. Presently, the Orgtekhstroy trusts are the main engineering link in the startup of new-equipment production. The organizational plans and work-production plans are the direct conduits of scientific-technical progress in oil and gas enterprise construction. The production main administrations and trusts must use this powerful lever, so that the simplest problems are not referred to the ministry or to scientific-research institutes for recommendations. The quality of the measures included in the plans for technical development of trusts and associations (i.e., the implementation plans) must be examined seriously.

In thinking out the new management concept, it is especially important to determine the correct role for technical-progress services, and to understand the function of the Scientific-Technical Council. The work of this council needs fundamental and rapid restructuring. The council must become an effective collegial body and a scientific-technical center for the sector. The council must determine the technical policy for the sector's cardinal problems and must initiate the implementation of fundamentally new technical ideas and new technologies.

The reserves and potentialities of scientific-technical progress in the sector will remain reserves and unused potentialities of the scientific-technical foundation of restructuring if the matter of progress does not occupy the minds and time of each sector employee.

The understanding of shortcomings allows a clearer view of the directions for work improvement. Therefore, all managers and specialists working on tasks of sector scientific-technical development must be highly self-critical, and must focus on overcoming shortcomings. Technical progress is unthinkable without creative people with initiative.

Personnel Questions

The success of reconstruction critically depends on how quickly and thoroughly all personnel understand the necessity of the changes taking place, and how energetically and competently they act. The essence of the measures specified by the party Central Committee is to truly modernize personnel policy and to connect it directly with the key directions in the struggle for socio-economic acceleration. Each work section must be headed by people devoted to the party and to the people. These leaders must understand the need for fundamental changes and be capable of destroying inertness and routine. They must be able to solve their assigned tasks creatively.

The human potential of our ministry's organizations and enterprises has increased significantly. Today, the sector has a half-million workers, and more than 70,000 engineers and technicians.

We have many examples of leading workers, brigade leaders and subdivision managers who, not waiting for any directives from above, are innovative and attempt to implement efficient work methods and accelerate scientific-technical progress. Among those who are actively engaged in restructuring are: Nikolay Pavlovich Nezhdanov, a well-known brigade leader, Hero of Socialist Labor and USSR State Prize winner; Boris Pavlovich Diduk, a brigade leader and USSR State Prize winner; Viktor Nikolayevich Strizhkov, manager of Samotlortruboprovodstroy Trust, and Ivan Grigoryevich Dupliy, manager of Tatnefteprovodstroy Trust.

However, in the matter of restructuring and in problems of executing personnel policy, we have not yet outgrown our old habits and traditions, and we are slow to implement the new requirements and evaluations. A certain number of managers still are attempting to play down mistakes and to keep criticism limited to partial shortcomings of individuals. We still have alteration of documents, substandard work, a high accident rate,

malfeasance of personal position, management overgrowth and illegalities in the distribution of housing and other benefits. The trust managers fired in the last 2 years include those who were not up to the tasks, those who made serious miscalculations in work or personal behavior and those who were not able to accept restructuring.

Some organizations still have not eliminated the practice of appointing to management posts those who have not earned the public trust or those whose speciality and level of preparation have nothing in common with the nature of their duties. Thus, out of 112 engineers and technicians in territorial quality inspectorates, only 29 are civil engineers, and only 18 have actual on-site construction experience. Obviously, the inspectorates have not become authoritative and effective bodies for monitoring quality or for professionally influencing the construction process.

There are still cases where poor employees, occupying jobs for long periods, become aloof from everyday demands and suffer the corrosive effects of idleness; they become haughty and lose their managerial quality. We must be decisive in getting rid of time-servers, careerists, those not able to fulfill their obligations and those who compromise the high calling of the Soviet manager. There cannot be any place in our ranks for managers who knowingly ignore party principles in personnel selection or who, to the detriment of work interests, assign workers according to patronage, personal devotion, nepotism or regional preference.

We are talking about an attentive, thoughtful, principled attitude toward the selection and replacement of personnel, and about the necessity of being governed in all cases exclusively by business interests. There is no place here for stagnation, unjustifiably rapid removal of employees, administration by edict, subjectivism or impatience with independent thinking or initiative.

In all sections, younger people must be able to gain experience and become toughened by working hand in hand with tested personnel of older generations; young, promising employees must be promoted more boldly. Good organizers among non-party and female comrades must be more actively promoted to responsible posts. Deserving workers should be recommended for management work more often. These workers must be encouraged by all means to study in VUZ's and tekhnikums, and they must be taught to be commanders of production.

Personnel selection is not a formalistic matter. Underevaluation of the political and theoretical training and the ideological-moral toughening of personnel results in serious delays, detracts from business and, above all, detracts from personnel work.

The pace of our progress and the course of restructuring greatly depend on how quickly we turn away from our outmoded work methods and how quickly we develop new management methods which meet present requirements. The time has come for detailed discussions with each lagging trust, enterprise and administration, to disclose all the reasons for poor performance and to analyze the activity of their managements. All those who are not in the right places and who are not capable of managing their affairs must be

transferred, without dramatics, to different work in line with their capabilities.

The ministry's central staff has great responsibility for realizing the party's strategic course for acceleration. This year, the staff was reduced by 300 people, while a stream of new people was brought in from production. But restructuring the ministry staff to the new working style and methods is complicated and difficult. The employees of the central staff must study thoroughly and implement more resolutely the new management methods. They must more actively influence the solution of future problems of technical progress and the improvement of production economic efficiency. They must solve quickly problems involving the fulfillment of state plans.

The January 1987 CPSU Central Committee Plenum emphasized that the most important condition for accelerating the country's socio-economic development is the all-around evolution of socialist democracy and deepening of popular self-management.

Even before the January 1987 CPSU Central Committee Plenum, many of the sector's organizations held brigade-leader elections. Recently, several held elections for management posts.

Our task is to implement democratic principles widely in all areas of labor-collective activity. In order to make this process organized and effective, the establishment of labor collective councils must be accelerated. These councils must be actively involved in the restructuring of all operations and in the solution of personnel problems. The practice of having labor collectives elect brigade leaders, foremen, trust managers and enterprise directors must be made universal. When electing managers, the main administration, the association and the trust manager must participate actively in this process, and along with party and trade-union organizations select worthy management candidates and recommend them to the collective. Labor collectives will have the deciding voice.

It should be emphasized that elections and one-person management are not contradictory, but rather are complementary. The manager, elected by the collective, simultaneously receives broader rights, including moral rights, to demand that everyone observes proper procedure, maintains labor and technological discipline and works strenuously.

All employees must express their opinions on the manager's personal characteristics and performance. However, the people in the labor collective who should have the decisive influence are not the slaggards, slipshod workers, self-seekers or troublemakers, but rather the honest workers, the masters of their professions, those who attempt to accelerate reconstruction through deeds, not words.

With labor collectives at organizations and enterprises having greater independence, the most important thing is not to impose outside influences on the collectives.

It has come time to transfer problems of organizing competition between administrations, spreads and brigades to the level of main administrations, associations, trusts and enterprises. Competition must be changed from an extracurricular activity, as it is now, to a vital pursuit, so that the partners know one another and see the actual results and sources of their achievements.

Do labor collectives really need to be mobilized to accept higher obligations or counter plans after the state plan is approved, as is the present practice? It probably would be more useful if the enterprise took account of its brigade and section obligations when the plan was being formulated. The plan could then become a law with mandatory fulfillment.

Taking into account the wide implementation of democratic principles, the existing personnel lists of the ministry, main administrations, associations and trusts need to be revised. The right to order the assignment or firing of certain categories of employees needs to be transferred to other management levels. Besides enhancing these employees' responsibility, this will make it possible to solve personnel problems more quickly. The practice of allowing acting officials to make employee assignments must be eliminated completely.

Problems of assigning chief engineers, deputy managers and leading specialists in trusts, construction administrations and industrial enterprises must be resolved very openly.

The necessity of regularly augmenting construction organizations with new personnel, and the implementation of a competitive system of selecting and replacing managers and specialists require a fundamental improvement in the preparation of a reliable reserve of promotion candidates. Above all, we must reject decisively the formalistic approach to selecting people for this reserve, and we must make the selection process more efficient.

A reliable reserve of promotion candidates must be established in each construction administration, trust, enterprise and main administration. A person's reputation and working and moral qualities must be determined by the opinion of the labor collective and by the primary party organization, with broad openness, criticism and self-criticism of shortcomings. There must be active development of target training of promotion candidates, and they must be provided on-the-job training under the auspices of experienced specialists.

Some managers, because of production exigencies, or sometimes a lack of understanding of the importance of preparing a reliable personnel reserve, use various pretexts to prevent specialists from being assigned to education. Serious shortcomings are being permitted in personnel certification. There are frequent cases of a formalistic approach to the evaluation of specialists' working and moral qualities.

The people brought into personnel work should be experienced employees who know production, who have undergone party toughening and who are capable of coping with the present tasks. Consideration also should be given to

personnel who are released. A positive application should be found for their experience, knowledge and skills.

The prospects for socio-economic development and scientific-technical progress rest largely on the system and quality of education. Today, specialist training, more than ever before, must be closely linked with the problems facing the sector. It must be specific and targeted.

A good example of how to organize of training of young engineers is the work done by Glavtyumenneftegazstroy. In this system, every year up to 100 people, mainly leading workers, are sent to the Tyumen Construction Institute for education, at the trusts' expense. Their training takes into account their future work, and they become interns at the place where they will be working. For the second year now, these engineers are going to work at construction sites of the main administration; they are working fruitfully, and are consolidating their positions in production.

Recently, agreements were concluded between Siberian main administrations and VUZ's. These agreements specified the mutual responsibilities to train 2500 engineers in various fields by the end of the next five-year plan. A new form of cooperation in engineer training is being established between Tyumen Construction Institute and NIPIKBS. According to mutual agreement, a branch of the VUZ's Construction Structures Department is being organized at our institute. This branch will provide targeted training of engineers for organizations engaged in modular construction, with the participation of leading specialists in this field. The experience of fruitful cooperation with VUZ's must be expanded widely.

Under the new management conditions, managers have increased responsibility for determining the need for and utilization of young engineers and technicians.

The sector has over 6000 young specialists, most of whom are working in their chosen fields and are coping with their assigned responsibilities. This is aided by on-the-job training and tutorship, as well as the sensitivity and care exhibited by managers.

Severgazstroy Trust pays great attention to its young specialists. This work is going well in the Nefteprovodmontazh, Ukrtruboprovodstroy, Gazmontazhavtomatika and Tyumengazmontazh Trusts, and in the Surgut House-Building Combine. However, a number of trusts are not preparing to receive young specialists, and are not fulfilling their obligations to provide housing. The practice of the unjustified use of young specialists in the workplace is continuing.

A fundamental change is needed in the attitude toward young specialists, and care must be taken in their development. Young specialists need to be trusted more often with independent sections, while capable, politically mature young specialists must be promoted to more responsible work.

The tasks formulated by the January 1987 CPSU Central Committee Plenum require a cardinal improvement in personnel retraining. This pertains primarily to the sector system of skill improvement.

Some main administrations chronically do not fulfill their plans to improve personnel skill levels, and sometimes assign workers to education without taking into account their level of preparation.

Especially important is the selection of candidates for education in technical schools. It costs an average of 1200 R to train one machine operator, and 2000 R to train a welder. However, neither the educational institutions nor the sector subdivisions are affected by these costs. The problem of converting worker training to the cost-accounting system must be solved in the shortest possible time.

The sector skill-improvement system needs fundamental changes: the material base is lagging seriously, and modern classrooms and equipped offices are lacking. There are shortages of dormitories, cafeterias and modern equipment.

Educational institutions which have a need should be provided quickly with competent, dynamic executives.

The present restructuring requires a significant improvement in the educational process. For this, teaching and laboratory equipment must be renewed constantly, and tekhnikums must be saturated with the latest equipment and mechanisms in each field, as well as with microcomputers. Specific help must be given in organizing and carrying out practical production training. Greater attention must be given to the attractiveness of our educational institutions, and modern sports facilities must be constructed to attract young people to tekhnikums.

The January 1987 CPSU Central Committee Plenum called on management personnel to work directly to develop the social realm. Some of our managers have not taken on full responsibility for the integrated, all-around development of their collectives. The solution of individual problems is sometimes passed off as constant attention to social problems.

Organization, accuracy and industriousness are not always enough. Because main administrations were late in providing their trusts and subdivisions with the construction program for housing and public facilities for West-Siberian organizations for the 12th Five-Year Plan, the labor collectives do not know the volume of housing or public facilities they will receive, either by year or for the entire five-year plan.

The cooperative construction of housing and the construction of youth housing complexes are going poorly. The program for relocating people from temporary housing is being executed unsatisfactorily. The rates of sanitation-network development, and the rates of pioneer-camp and sports-facility construction are too low.

All management personnel from top to bottom are responsible for carrying out the active social policy of the party. It is vital that human interests be given top priority in the activity of management personnel; the ability to solve social problems has become one of the main criteria of a manager's professional and political maturity.

The decisions of the 27th CPSU Congress and the January 1987 CPSU Central Committee Plenum pose the task of improving the utilization of labor resources, establishing more favorable conditions for high-efficiency labor, more actively implementing the scientific organization of labor and efficiently using working time. These tasks fully pertain to Minneftegazstroy collectives.

Everyone needs to work harder, to develop criticism and openness more skillfully, to eliminate decisively any retarding processes and influences and to fulfill the collectives' plans for socio-economic development.

The best method of worthily celebrating the 70th Anniversary of the October Revolution is to activate all our transformation work and to achieve new perceptible successes in the effort to accelerate the country's socio-economic development and to implement the decisions of the 27th CPSU Congress.

The Minneftegazstroy Collegium has decreed to abide by and unswervingly execute the decisions of the January 1987 CPSU Central Committee Plenum. Measures have been approved to realize the Plenum decree "Restructuring and Personnel Policy of the Party." The Collegium has obligated the managers of the Ministry's main administrations, associations, organizations and enterprises to do everything necessary to fulfill these measures.

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COST SAVINGS PROPOSED FOR YAMAL GAS PIPELINE CONSTRUCTION

Moscow STROITELSTVO TRUBOPROVODOV in Russian No 6, Jun 87 pp 12-16

[Article by O.M. Ivantsov, Minneftegazstroy, under the "On the Path of Scientific-Technical Progress" rubric: "Make Permafrost an Ally; A Topic for Discussion"]

[Text] Minneftegazstroy [Ministry of the Construction of Petroleum and Gas Industry Enterprises] and Mingazprom [Ministry of the Gas Industry] have discussed the basic technical solutions for developing the Yamal gas-condensate fields and for constructing a system of gas pipelines from the Bovanenkovo and Kharasavey Fields. The Yamal Scientific-Technical Program has been developed, the fulfillment of which will require the more active use of the creative successes and new achievements of sector science and engineering. Also required is the uncompromising rejection of past stereotypes in the thinking and action of scientists, designers, project designers, construction personnel and employees at industrial enterprises.

Despite the fact that the restructuring of sector science has just begun, research organizations have gotten off to an early start and are giving greater attention to future problems, including the problems of Yamal.

Because of the ample lead time, bold ideas can be advanced and fundamentally new technical solutions can be proposed. There is time for checking, experimenting and, finally, selecting the best solution.

We will discuss several new engineering proposals which, in the author's opinion, need to be discussed widely.

Giprospetsgaz [State Institute for the Design of Main Pipelines and Special Construction] has been assigned the task of designing the first part of a multiline system of 1420-mm-diameter gas pipelines from Yamal; this is the first and most difficult section of the route from Bovanenkovo. The institute has decided to bury the main pipelines. According to the original design, the pressure at the initial point was taken to be 9.8 MPa. No intermediate compressor stations were provided for the 440-km-long section.

Since this entire section is located in permafrost, the gas is to be refrigerated after the main compressor station, in order to keep the soil frozen and preserve the load-bearing capacity of the soil base. The entire

section is to be provided with reinforced-concrete weights and partially ballasted with soil, using a nonwoven synthetic fabric.

The Bovanenkovo Refrigeration Station is to be equipped with ATP 5-16/1,0 propane-butane turbo-refrigeration units, the same kind which will be used at Urengoy and Yamburg, where the gas is to be refrigerated to -2 to -3°C . However, in the opinion of Giprospeetsgaz, by forcing the reserve capacity of these units, the gas can be refrigerated to -5 to -7°C ; taking into account the salt content of the soil in the first section of the route, this will make it possible to keep the soil frozen at a lower temperature.

The gas temperature and, consequently, the temperature of the pipe wall at the starting point depend on the capacity of the gas pipeline and the operating conditions of the refrigeration station.

Using computer modeling of the nonsteady-state heat exchange with the surrounding permafrost soil, VNIIST [All-Union Scientific-Research Institute for the Construction of Main Pipelines] investigated the thermal interaction of the gas pipeline in the Bovanenkovo-Laborovskaya Compressor Station section. This research took into account the dynamics of the seasonal changes in initial parameters of the transported gas, as well as the climatic and geocryological parameters of the region through which the route passes.

A software package for YeS computers was used to calculate the distributions of gas temperature and pressure in the pipeline, as well as to determine the temperature fields in the surrounding soil.

The calculation results for an initial gas temperature of -7°C are shown in Fig 1.

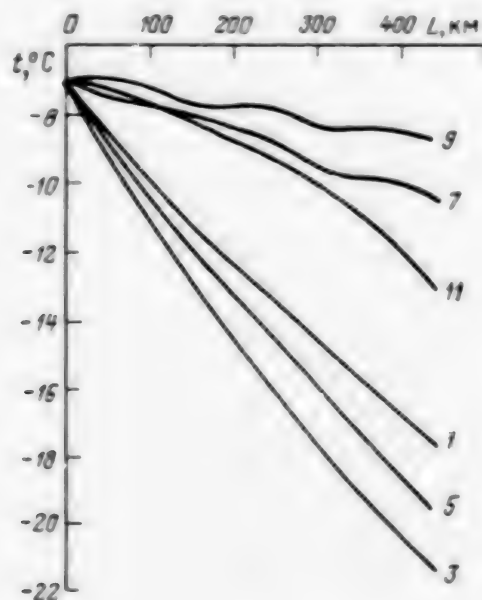


Figure 1. Change in the Average Monthly Temperature of the Pipeline Gas Over the Length of the Pipeline During the Second Year of Operation. Curve Numbers Designate the Month of the Year.

Because of throttling of the gas and heat exchange with the permafrost soil, the gas reaches the final point at a temperature much lower than the initial temperature. As can be seen in Fig 1, the lowest predicted gas temperature at the end of the section is -20 to -22°C in March.

During the summer (months 7-9), the temperature at this point does not go below -13 to -14°C , since during the summer, the heat flux from the soil to the pipeline increases, which reduces the effect of throttling.

As the research showed, during winter, the intensity of the heat exchange between the pipeline and the soil decreases sharply, the throttling effect increases and the gas temperature decreases. Figure 2 shows a model of the temperature field in the initial (a) and final (b) cross sections of the pipeline. While the gas temperature and the soil temperature are similar in the initial cross section, the soil has a higher temperature in the final cross section, while the gas temperature is only -10°C .

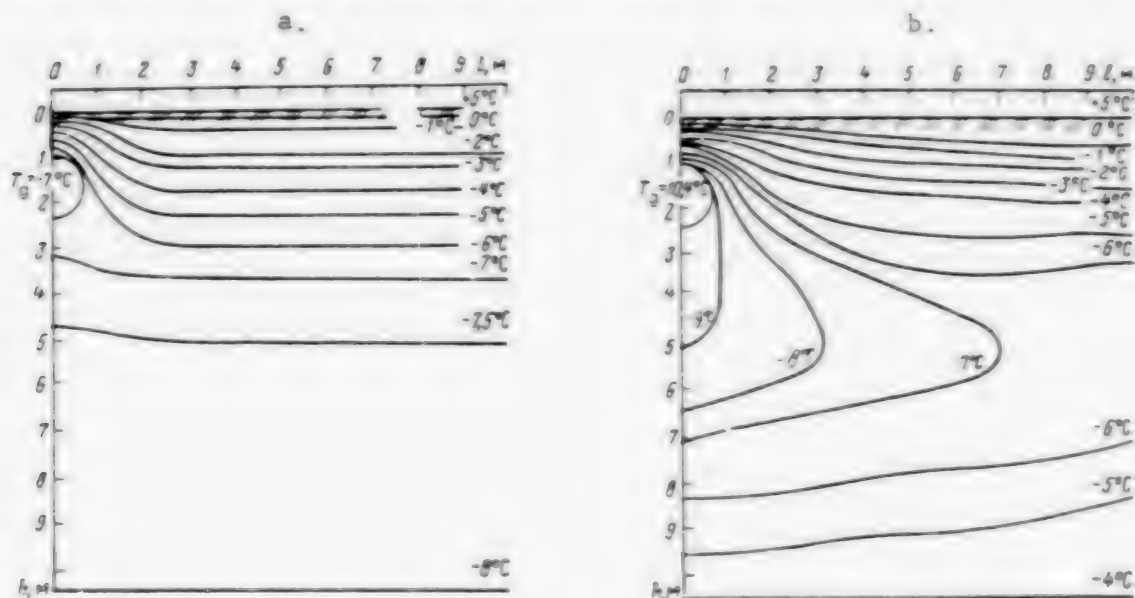


Figure 2. Model of the Temperature Field Around the Pipeline For July of the Second Year of Operation:

- in the initial cross section of the pipeline at a gas temperature of $T_g = -7^{\circ}\text{C}$
- in the final cross section of the pipeline at $T_g = -10.4^{\circ}\text{C}$.

Thus, with initial refrigeration of the gas to -7°C , the soil adjacent to the pipeline practically over the entire length of the first section will have a temperature of from -7°C to -10°C in summer and from -7°C to -20°C during the rest of the year. Thus, the pipeline will be inside a thick permafrost layer constantly. Under these conditions, all ballasting for the entire length of the section can be eliminated without any risk of the pipeline floating up.

However, this engineering solution can be realized only if the first pipeline section and the refrigeration station are built in a certain sequence. The station must be erected by the time that work on the pipeline part is completed. Thus, before the summer period begins, the gas pipeline must receive refrigerated gas.

This solution requires that all the pipeline construction on the first section be done during one winter season; otherwise, the trenches will become filled with water during the summer, which will cause the unballasted pipeline to float upward. The experience of pipeline construction in the North shows that this is a realistic amount of time for constructing a 440-km-long section entirely through permafrost. Thus, the possibility will be practically eliminated that the pipeline will be subjected to any axial forces caused by the difference between the construction and operating temperatures. Consequently, there will be no additional buoyancy acting on arched sections. Ballasting might be needed only in sections of thawed, water-saturated soils, for example, in pipeline crossings through water obstacles. A temporary shutdown of the refrigeration station will not cause any serious complications, since considerable excess cold will have accumulated in the soil.

The operating temperature conditions of the gas pipeline and the state of the permafrost soil around it during the second year of pipeline operation are characteristic for the entire period of pipeline operation (see Fig 2). However, it is important to determine the temperature field around the pipeline at the moment of startup. Since construction of the refrigeration station must be completed by the time the first section of the pipeline is finished, refrigerated gas will be supplied into the pipeline from the start. Because of throttling and heat exchange with the permafrost soil, the gas temperature will decrease toward the end of the section.

Let us assume that the pipeline is started up in April. At this time, the soil temperature at a depth corresponding to the pipeline depth is -11°C . In May, it increases to -10.2°C , in June to -6.6°C and in July to -3.7°C . Due to the influence of the summer heat and melting soil from the surface, the highest temperature of the permafrost at the pipeline depth will be in November (-1.3°C). However, around the pipeline, the temperature during the warmest months, July and August, will be equal to -6.5°C in the lower part and -4.6°C above the upper generatrix, while in November, these temperatures will increase to -5.7°C and -4.1°C , respectively. Thus, the temperature around the pipeline will be lower than in the permafrost at the pipeline level. Isotherms of lower temperatures will rise around the pipeline, forming a sort of dome. Thawed waters will not be able to penetrate to the pipeline even through draining soil of poorly backfilled trenches; consequently, the pipeline will not lose stability and float upward. Even during the warmest time of the year, the temperature will be -1.5°C above the pipeline at a depth of 0.5 m below the surface, while at a depth of 0.8 m, it will be -2.37°C .

The proposed pipeline design in permafrost will remain fundamentally the same and valid for the alternative of pumping gas from the Yamal fields at a pressure of 7.4 MPa, as well as for another alternative with the first section having an intermediate compressor station 315 km from the

Bovanenkov Field. Moreover, this solution can be adopted for all sections where refrigerated gas is to be pumped through a pipeline in permafrost areas.

The elimination of ballasting in the first section will provide a significant saving of material resources, transport and labor expenditures. This will eliminate the emplacement of over 210,000 tons of reinforced-concrete weights along just the 440-km-long section of the pipeline. Under the conditions on Yamal, this means a saving of about 100 million R. The total saving for the entire gas-pipeline system on this section will be about 700 million R.

Because no weights will be used, the excavation of narrow trenches in permafrost will require less permafrost excavation and less backfilling with trucked-in soil, and the work will be simplified.

Following the Construction Norms and Rules for gas pipelines in permafrost soils which when melted have a relative settlement of over 0.1, Giprospetsgaz has placed practically the entire first section of the Yamal System in categories I and II, and has called for pipe with a wall thickness of 26 mm. Since refrigerated gas will be handled, no soil settlement is expected in this section. Temporary shutdowns of the refrigeration station during the operating period will not cause the soil to thaw. Thus, the designation of these sections as categories I and II is simply unjustified.

Category-III pipe should be used, which has a wall thickness of 21.6 mm and is designed for a pressure of 9.8 MPa. Khartsyzsk Pipe Plant can manufacture this type of 1420-mm-diameter pipe made of 10G2FB steel, which has the required properties for low-temperature service.

In order to protect northern refrigerated-gas pipelines from corrosion, a new process system called Kholod has been proposed.

Underground tube steel corrodes because of the influence of oxidizers in the soil: the soil aqueous electrolyte, oxygen diffusing through the soil and oxygen dissolved in the electrolyte. Dissolved salts in the electrolyte accelerate the corrosion processes. According to GOST [All-Union State Standard] 25811-83, the normal content of these salts is 1 g per 1 kg of soil.

A series of measures are used to protect underground pipes from corrosion: an insulation coating is applied to the pipe surface, and sources of cathodic polarization are connected to the pipe. The insulation coatings form a physical barrier preventing oxidizers from reaching the surface of the steel pipe. Cathodic protection prevents corrosion damage of the steel pipes in places where the insulation coatings are interrupted.

At critical temperatures, all phase transformations in the soil electrolyte cease, and the electrolyte becomes entirely crystalline. A certain portion of the unfrozen water remains oriented according to the mineral framework of the soil; this disrupts its translatory motion and distorts the general structure. The corrosiveness of this electrolyte system is low, and is

close to that of ice. The overall state of the soil can be characterized using equilibrium phase diagrams of the electrolyte. As an example, we present the diagram for a 3-percent NaCl solution, which has corrosion properties equivalent to those of various soils (Fig 3). As this diagram shows, this solution begins to solidify at a temperature of about -2.5°C .

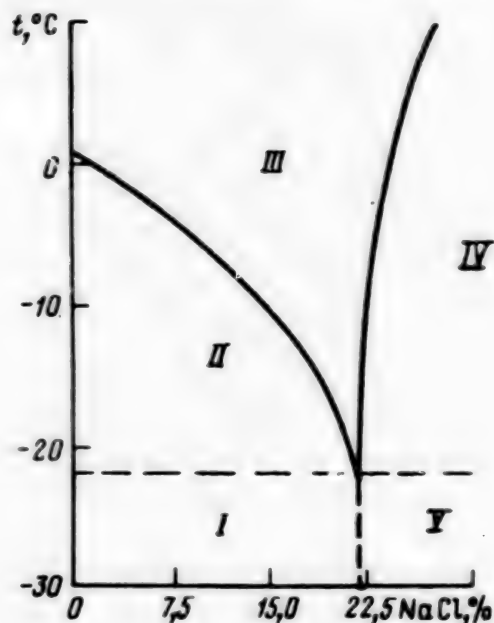


Figure 3. Equilibrium Phase Diagram of an Aqueous NaCl Solution:

- | | |
|--------------------|---------------------|
| I. hypoeutectic | IV. salt + solution |
| II. ice + solution | V. hypereutectic |
| III. solution | |

Note: The dotted line indicates the eutectic temperature.

Experimental research using the nuclear magnetic resonance [NMR] method showed that as solidification progresses, the solution concentration increases, which corresponds to the conditions of slow freezing of strongly waterlogged soils.

The phase transformations cease at a temperature of -5°C . Frozen soil, in which all the free moisture has solidified, has a specific resistance of $10,000\ \Omega$ or higher. The formation of a crystalline framework in the frozen soil practically completely prevents the free oxygen from reaching the corroding surface, and significantly reduces its depolarization. Therefore, there is an overall retardation of the corrosion processes. The rate of these processes decreases to $0.1\ \text{mm/year}$; i.e., to a magnitude characteristic of corrosion-resistant metals (Fig 4).

As a result of the increase in soil specific resistivity, the corrosive action of the galvanic couples is largely reduced, and sometimes completely eliminated.

An increase in the salt content of the soil does not change the overall qualitative characteristics of the process. Thus, in order to ensure that the corrosion processes occurring in the tube steel are reduced to not greater than 0.1 mm/yr, which would make it possible to eliminate cathodic protection, the gas must be cooled to a temperature of -8°C for soils with a salt content of 3-4 g/kg.

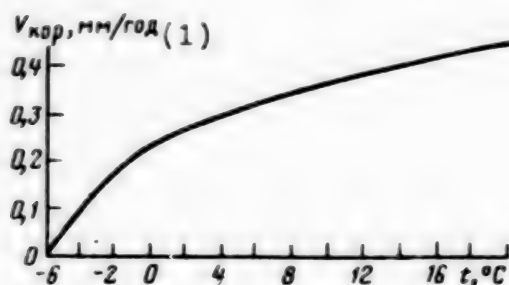


Figure 4. Temperature Dependence of the Corrosion Rate, V_{cor} :

(according to data obtained on the northern section of the Punga-Vuktyl-Ukhta-Torzhok Pipeline during 8 years of operation)

Key:

1. $V_{\text{cor}}, \text{mm/yr}$

A series of targeted experiments is now being conducted, within the framework of the Korroziya sector program, to determine the exact relationships between the refrigeration temperature and the residual corrosion rate of pipeline steel in soils of various compositions, types, salt contents and moisture contents characteristic of the regions on the Yamal Peninsula through which the pipeline will pass.

In sections where the temperature will temporarily exceed the permissible limits, the probability of direct contact between the pipeline steel and corrosive oxidizers, and the probability of the formation of galvanic couples will be small, since the pipeline will have an insulation coating.

From the above analysis, it can be concluded that if a gas pipeline temperature of not less than -5°C is maintained, provided the soil salt content is normal, electrochemical protection of the underground main pipeline can be eliminated. If the salt content of the soil electrolyte is 2- to 3-fold higher, the gas temperature must be reduced to -8°C , which approximately corresponds to the temperature conditions of the initial sections of the gas pipeline system from Yamal.

The use of the new, simplified system of corrosion protection will make it possible to eliminate the need for cathode stations over a significant portion of the Yamal gas-pipeline system, and will eliminate the need for electric power lines to supply them. According to rough calculations, this will save about 20 million R.

The present proposals can be used in the development and construction of refrigerated-gas pipelines in permafrost regions, including the main gas pipelines from Yamburg. Permafrost must be not an opponent, but an ally in the construction and operation of main pipelines.

FOOTNOTES

1. Proposed by the present author, together with candidates of technical sciences A.D. Dvoyris and V.V. Pritula.

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INTERSECTOR SYSTEM DELIVERS PIPE TO NW SIBERIAN PROJECTS

Moscow STROITELSTVO TRUBOPROVODOV in Russian No 6, Jun 87 pp 22-26

[Article by V.Ye. Glazkov under the "Construction in Western Siberia" rubric: "Intersector Transport System for Supplying Pipe to West-Siberian Projects"]

[Text] The country's main gas and gas-condensate fields designated for exploitation during the 12th and succeeding five-year plans are located in northern Tyumen Oblast. The raw-material base of the gas industry in the 11th Five-Year Plan was the Urengoy Field; in the 12th Five-Year Plan, it is the Yamburg Field, and in the near future, it will be the Yamal Field. The northern group of fields is providing the main increase in gas production in this country, and will be the main raw-material base until the end of the century.

Because of this, the volumes of construction of oil- and gas-industry facilities in the North are increasing every year. The planned development of the pipeline network in this region requires large deliveries of pipe, gas-compressor units and other process and construction equipment.

The economic development of Western Siberia needs support from the productive capacity of the country's populated regions, above all the old oil- and gas-producing regions. With an established production base, these regions specialize in the production and supply of machinery, equipment and structural and building materials; these regions also serve as a source of skilled personnel. Utilizing the potentiality of populated regions dramatically shortens the pioneer development period of new fields, and permits these fields to begin producing more quickly. Under these conditions, transport is the key component in the interregional redistribution of productive capacity, and at the same time is one of the main limitations on the rate and scale of economic development of new regions. The distinguishing natural and climatic features of the West-Siberian region makes the problem of transport especially difficult.

Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] accounts for a significant part of the demand for material resources in the West-Siberian oil-gas complex.

The polar zone of the West-Siberian oil-gas complex accounts for an estimated 30 percent of the total volume of freight shipments.

Thus, providing transport for the ministry's West-Siberian construction projects is a major task for the sector. The volume of materials and equipment supplied to this area has reached 15 million tons. On a sector scale, this volume represents almost half of all long-distance shipments. The annual increase in the sector's freight volumes is 3-3.5 percent, while the increase is much higher in the northern regions of Tyumen Oblast. Pipe represents 12-15 percent of total shipments; however, the importance of pipe in construction and the difficulty of transporting it (size, weight and damage-prevention requirements) require greater attention to this type of freight.

The transport system for supplying freight to construction projects of the West-Siberian oil-gas complex has an over-20-year history of development. In that time, new transport links have been established, regular shipments via the region's rivers have been started and the road network has been expanding. River ports in the Ob-Irtysh Basin have been built or renovated. New airports have been established. However, the supply lines are intermittent, being mainly via water. Water transport, while having a number of advantages, has one main disadvantage: seasonality.

The development of the transport system, especially in the northern part of Tyumen Oblast, is being held back by the unavoidable delay in establishing the necessary transport links. Despite the relatively rapid growth of the transport network, the strain on the system has not lessened, since the construction front is shifting to new oil-gas regions. The acuteness of the problem is complicated by the initial low level of development of transport and freight-handling capacities in the populated part of Western Siberia, and by the practically complete absence of these in the North. The transport system of developing regions is distinguished by great dynamic variability. In the first stage, primarily natural supply lines are used: rivers, and in the winter, temporary roads (winter roads). Next, permanent docks are constructed for handling vessels; airports are built, a road network is formed and main railroad lines are built.

Since a large portion of the freight for the construction of 1420-mm-diameter gas pipelines in the northern regions of Tyumen Oblast will be imported pipe, the efficient organization of pipe shipments is the key factor in the successful fulfillment of the construction program. Pipes are exported through the European ports of Rotterdam, Bremerhaven, Hamburg and Antwerp to Soviet ports in the northwest basin. From these ports, the pipes travel by rail to river ports of the Ob-Irtysh basin where, due to limited railroad capacity, storage depots have to be established. During the shipping season, the pipes are transported down the Ob to the mouths of the Kazym, Nadym and other rivers, then upstream via small rivers to unloading points. Finally, the pipes are trucked directly to the pipeline site over winter roads.

By the middle of the 10th Five-Year Plan, it became obvious that radical changes were needed in the system of transporting pipe and other freight to the construction projects of the West-Siberian oil-gas complex. The slow development of the transport network became a serious impediment to fulfilling the important program of forcing an increase in oil- and

gas-industry capacity. Pipe shipments to construction projects became less regular and reliable, and the load on rail and river transport increased excessively. The complicated transport system not only disrupted the regularity of pipe supplies to construction projects, but also disrupted scheduled pipe shipments from foreign ports, which caused increasing hard-currency fines.

As the end sections of the shipping system extended ever farther north, the specific conditions in these sections began to have a greater effect on the reliability and regularity of the system. Thus, the sector became unable to cope with the transport task. In order to eliminate the negative factors affecting the fulfillment of this task, special depots had to be established for storing large seasonal and emergency reserves of pipe in the Tobolsk, Omsk, Sergino and other areas. This tied up a large amount of resources. These depots somewhat regularized the operation of the end section of the transport system, but also required additional pipe handling. This reduced the quality of the pipe, caused metal losses resulting from the removal of defective sections and involved large additional expenditures for removing dents and restoring beveled edges. The establishment of depots does not solve the problem radically, since the supply of construction projects continues to depend on the conditions of a single transport system, which has practically no reserve capacity left.

Under these conditions, a fundamental restructuring of the transport system was required, with a simultaneous expansion of different ways of shipping pipe. The first way of solving the problem involves increasing the rail capacity to and within Tyumen Oblast; the main task is to extend the rail system directly into the regions of oil-gas construction.

Another solution, which overcomes the shortcomings of the traditional system and which will be able to supply construction projects for a minimum of 10 years, is to use the Northern Sea Route. This is in accordance with the unified government strategy of economic development of the country's arctic regions.

According to an initiative of Minneftegazstroy, with the active participation of USSR Gosplan, USSR Ministry of the Maritime Fleet and RSFSR Ministry of the River Fleet, an intersector transport complex (Fig 1) was established. The use of the Northern Sea Route to deliver freight to the construction projects of the West-Siberian oil-gas region opened the way for a fundamental improvement in the structure of transport support for oil-gas construction. It also laid a firm foundation for future growth as oil and gas production moves farther north.

By the traditional shipping system, pipe is delivered by ocean vessel to western ports, and then transported by rail, water or truck through the European and Asian parts of the country; individual route segments exceed several thousand kilometers. In contrast, the new transport system provides for the direct delivery of pipe to the large-scale development region of the West-Siberian oil-gas province. This, which is important for the efficient use of the maritime fleet, makes it possible to utilize both incoming and outgoing voyages, since the fleet previously sailed in ballast to arctic ports to load timber and ore.

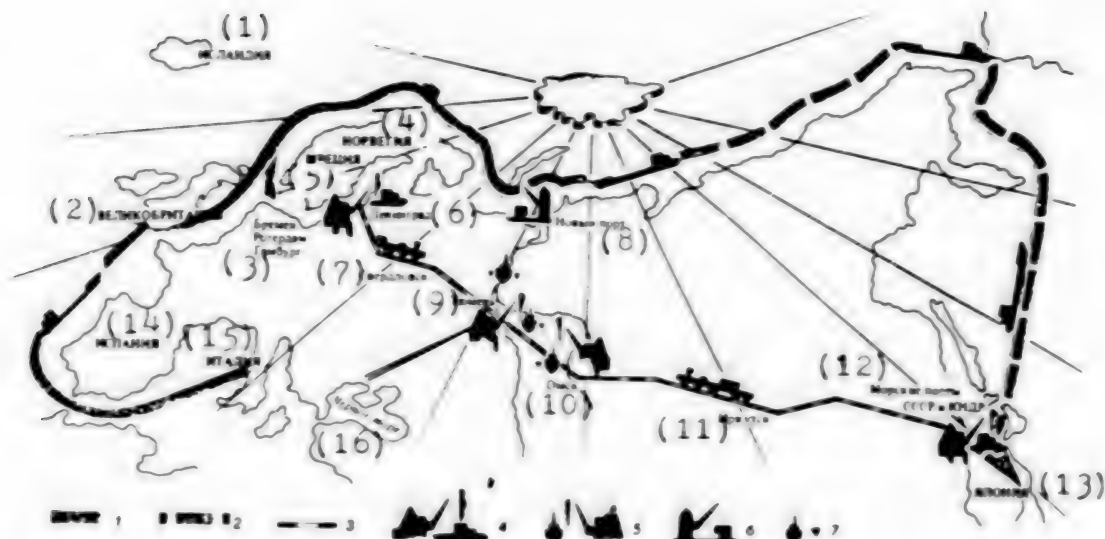


Figure 1. Transport Routes for Delivering Imported Pipe to the Northern Regions of Tyumen Oblast:

1. delivery of pipe through the western sector of the Northern Sea Route from West-European ports;
2. delivery of pipe through the eastern sector of the Northern Sea Route from Japanese ports (future supply route);
3. railroads
4. transshipment from ocean vessels to rail transport
5. transshipment of pipe from rail to river vessels
6. unloading of pipe from ocean vessels
7. shipment of pipe via river

Key:

- | | |
|-------------------------------|-------------------------------|
| 1. Iceland | 9. Tyumen |
| 2. Great Britain | 10. Omsk |
| 3. Bremen, Rotterdam, Hamburg | 11. Irkutsk |
| 4. Norway | 12. USSR and DPRK ocean ports |
| 5. Sweden | 13. Japan |
| 6. Leningrad | 14. Spain |
| 7. Sverdlovsk | 15. Italy |
| 8. Novyy Port | 16. Black Sea |

Thanks to some original solutions (Fig 2), the pipe can be transshipped from ocean vessels to river vessels in the Gulf of Ob, without the need for capital construction of port facilities. From there, the pipe is shipped via short river routes directly to the pipeline construction sites.

The delivery of a pipe shipment (7000-20,000 tons, depending on the type of ocean transport) using the new transport system takes a minimum of 45-50 days, as opposed to 6 months, and sometimes a year, using the old system.

In 1980, experimental-industrial implementation of this new shipment system began. In the initial period, the shipment volume was 83,000 tons, while in 1986 it was 406,000 tons.

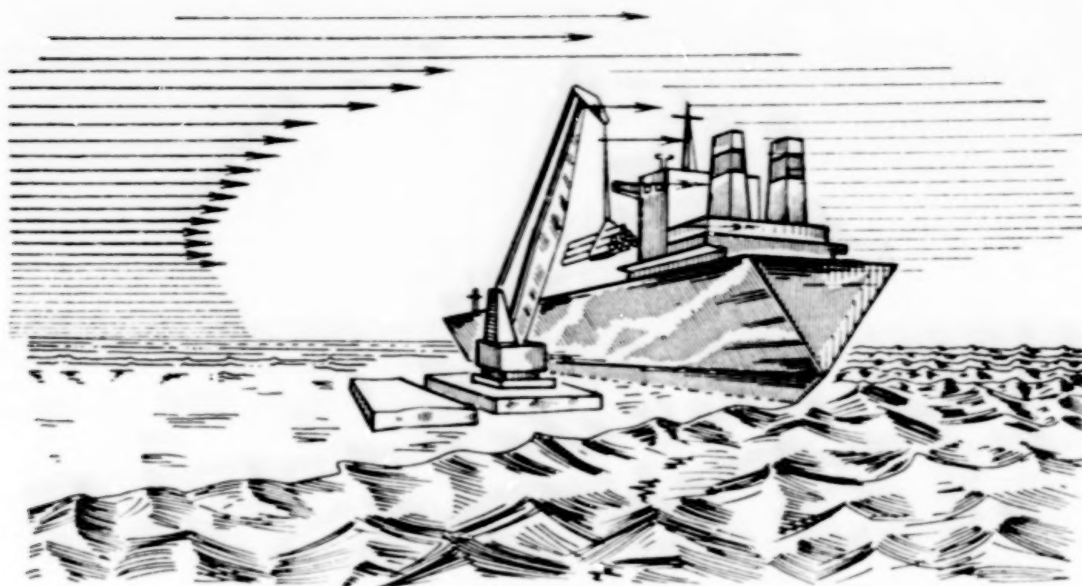


Figure 2. Transshipment of Pipe from Ocean Vessel to River Vessel Under Extreme Wind and Wave Conditions.

The development of the new intersector transport system realized three aims of the 27th CPSU Congress: coordinated development of the country's unified transport system, interaction of the transport system with other economic sectors and improved coordination between all types of transport. The new transport system ensured intersector cooperation and restructuring of the shipment system, and made it possible to achieve quickly a considerable economic advantage practically without capital investments, additional expenditures of materials or additional workers. The new transport system has shown the high efficiency of flexible targeted interaction between maritime- and river-transport enterprises and construction, supply and foreign-trade organizations.

The savings from the implementation of the new transport system were manifested immediately in several areas of the national economy. Oil-gas construction was helped because transport support for construction projects improved materially, and the construction times for main gas pipelines were shortened. Pipe began to be delivered in 1/5-1/6 of the previous delivery time; the reliability and regularity of deliveries improved; transport delays noticeably decreased and the number of pipe handlings was reduced, as a result of which the pipes were delivered in better condition. Maritime transport was helped because timber and ore ships eliminated voyages in ballast; significant capacity in Soviet ports of the Baltic Basin was made available and fleet idle time for freight handling decreased. Rail transport was helped because about 50,000 railcars were made available, and the strain on the network decreased, which made it possible in 1980-1985 to transport more than 2.3 million tons of additional freight of various types. The length of river shipments was decreased to one-fourth to one-fifth. It became possible to dedicate river transport

largely to the acceleration of consumer-goods shipments. Now, transport expenditures for delivering an equal quantity of pipe have been reduced to nearly one-fifth. Contract obligations are being fulfilled more reliably.

Along with solving difficult problems of selecting navigation routes and practices, and of developing technologies for transshipments and freight-handling work, a unified system of planning, organizing and managing pipe shipments had to be established. The novelty and special importance of this system are that it allowed several ministries to concentrate their efforts on solving a large, targeted task of national-economic proportions. The excellent efficiency of organizational-planning solutions made it possible to obtain a quick return. The program-targeted nature of the system, and the utilization of the advantages of matrix structures, show this system's advantages over even the most progressive systems of managing the interaction of several types of transport, such as the Leningrad system. The system's great flexibility provided for efficient management of a seasonal shipping process and coordination of different transport sections. It also allowed the system to be adapted to the distinguishing features of freight handling in open roadsteads and concentrated deliveries of pipe via river.

An important problem in the development of the new transport system was the inclusion of it into the unified transport system on the Northern Sea Route. The new freight route had to cause minimum distortion in the existing system, taking into account the existing schedules and shipping practices. The new transport system augmented the freight traffic of export timber and ore, making it possible, as was noted above, to load ships for both legs of the route.

The existing subdivisions of the central apparatus of the ministries and departments involved, as well as of their organizations and enterprises directly participating in the shipments, without any changes in their organizational structures, were oriented toward ensuring and realizing pipe deliveries over the Northern Sea Route. A mechanism was developed for managerial interaction between the ministries and departments participating in the system. The essence of this mechanism is that the employees of the highest link (USSR Gosplan and USSR Gosstnab) and of the functional links of the participating ministries fulfilled the target tasks of system performance along with their ordinary functional tasks. In a number of cases, individual managers took time off from their main duties, and after taking care of pipe-shipment tasks, returned to their normal work.

Direct working relationships ensured that strategic decisions would be made and plan tasks fulfilled. The distribution of functions and obligations, and the mechanism of interaction between the ministries were improved as experience was gained.

The implementation of the new transport system received the necessary scientific, planning and organizational support, which made the system very economically efficient.

This experience indicates the possibilities of expanding the volume and types of freight delivered to oil-gas construction projects over the Northern Sea Route.

This transport system will be developed further during the 12th and 13th Five-Year Plans, especially in connection with the development of the Yamburg and Yamal Fields and the construction of pipeline systems from them to the center of the country.

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